



November 25, 2008

US EPA RECORDS CENTER REGION 5



Ms. Terese VanDonsel  
United States Environmental Protection Agency  
Office of Superfund, Region 5  
SR-6J  
77 West Jackson  
Chicago, IL 60604-3590

Re: Remedy Performance Monitoring Results  
Fields Brook Superfund Site, Ashtabula, OH

Dear Terese:

On behalf of the Fields Brook Action Group (FBAG), this letter report presents the results of the remedy performance monitoring performed in Exposure Units (EUs) 2 through 6 of the Fields Brook Superfund Site ("Site"). The monitoring requirements defined in the remedy Operations and Monitoring (O&M) Plan (O & M, 2004)<sup>1</sup> for the Sediment Operable Unit/Floodplain Wetland Area (SOU/FWA) were supplemented with additional samples to develop a comprehensive understanding of current environmental conditions. Overall, the sampling results indicate:

- Exceedances of the sediment PCBs remedial action level in EUs 4 and 6. Sediments from a localized area in EU6 will be excavated and disposed off-site, whereas the other remedial action level exceedances are marginal and do not pose a significant risk to human health and the environment.
  - The source control actions being undertaken by Millennium Inorganics Inc. (MIC) (e.g., installation of interceptor trench at their facility) in response to US EPA's Order are expected to be beneficial to Fields Brook.
  - The Fields Brook relocation and restoration measures proposed in EU-8 (by FBAG and MIC) will offer further protection to the Brook and minimize the risk of future sediment contamination.
- Detrex marker compounds were detected in sediment, surface water, and/or soil in EU6 and other downstream EUs. These data, along with other observations (e.g., DNAPL seeps at the North sewer), clearly indicate that Detrex source control measures have been ineffective and need to be investigated/supplemented. We understand that US EPA is in discussions with Detrex about this issue.

To summarize, the O&M Plan is working as intended, *i.e.*, providing the data needed to assess conditions in the Brook and to take appropriate remedial action, if needed. However, the success of the remedy for the Brook is predicated on effective source control, which is being addressed by US EPA with the appropriate parties.

The remainder of this letter discusses the monitoring program's scope, results, and findings in detail.

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<sup>1</sup> O & M. 2004. Fields Brook Superfund Site Post-Closure Operations, Maintenance, and Monitoring Plan. March.

## **1 Monitoring Objectives**

The O&M Plan for the SOU/FWA requires that sediment, soil, and surface water quality be monitored annually to assess remedy effectiveness and to ensure that the remedy remains protective of human health and the environment. Since elevated PCB concentrations had been detected in the EU8 and EU6 portions of Fields Brook, the routine O&M scope was expanded by including additional soil and sediment samples. The objectives of the expanded monitoring program were to:

1. Determine if PCBs found in soil/sediments in EU8 and EU6 had affected environmental conditions in further downstream EUs (2, 3, and 4); and
2. Determine the nature and extent of impacts for all key compounds of concern in Fields Brook, given concerns regarding source control effectiveness.

The following sections present the monitoring program and sampling results.

## **2 Monitoring Program**

Sampling was conducted in two rounds – an initial event in June 2008 and a follow-up event in August 2008. As part of the June 2008 monitoring event, samples required by the remedy O&M Plan were collected in EUs 2, 3, 4, and 6. In addition, certain elements of the work proposed by MIC in EU-6 to satisfy the requirements of the Order issued by US EPA (to MIC) were also implemented to develop a comprehensive understanding of sediment and soil quality (Gradient and de maximis, 2008)<sup>2</sup>.

Based on a review of the June 2008 sampling results, additional sediment samples were collected in EU8, 5, and 6 with the following objectives:

- Delineate the spatial extent of contaminated sediments in an area within EU-6 (FB-SD08; Figure 1) where elevated PCB and hexachlorobenzene (HCB) concentrations had been detected;
- Since the elevated PCB/HCB area in EU-6 was near the confluence of the DS Tributary and Fields Brook, sediment samples were collected in the DS Tributary to determine whether the EU6 PCB impacts were attributable to sediment contributions from the DS Tributary; and
- Generate a more robust sediment quality dataset in EU8, 3 and 4.

Figures 1 to 3 present the sampling locations and Table 1 summarizes the scope of the two monitoring events.

## **3 Monitoring Results**

A summary of the soil and sediment monitoring results for the key compounds of concern and a comparison of the detected concentrations to the applicable remedial action levels (also known as the Confidence Removal Goals or CRGs<sup>3</sup>) are presented in Tables 2 and 3, respectively. The soil

<sup>2</sup> Gradient Corporation and de maximis, Inc. 2008. Letter to T. VanDonsel (USEPA) re: Proposed Remedy Performance Monitoring Plan for EU6, Fields Brook Superfund Site, Ashtabula, OH. May 28.

<sup>3</sup> Soil and sediment remedial action levels/CRGs are applicable on a point-by-point basis.

and sediment data for key compounds such as PCBs, HCB, hexachlorobutadiene and chlorinated volatile organic compounds (CVOCs) by EU, are presented in Figures 4 through 12. The complete data tables for soil, sediment and surface water are presented in Appendix A.

### 3.1 PCBs

PCBs were detected in a number of Fields Brook floodplain soil and sediment samples, with the highest concentrations generally being detected in EU-6 (Figures 4 through 6). No exceedances of the soil remedial action level for PCBs were observed in any of the floodplain soil samples. This indicates that deposition of sediments onto the floodplain during high water conditions is not adversely affecting floodplain soil quality.

Exceedances of the sediment remedial action level for total PCBs were observed in EUs 6 and 4, with none noted in EUs 2 and 3 (Figure 4 to 6). In EU6, remedial action level exceedances were noted in 6 out of 26 sediment samples (Figure 4).<sup>4</sup> However, except for one value (130 mg/kg at FB-SD08), the other exceedances were marginally greater than the remedial action level, *i.e.*, a factor of 1.2 to 2.4 times the remedial action level. Sediment samples collected in the immediate vicinity of FB-SD08 to delineate the extent of contamination found elevated PCB concentrations to be rather limited since low concentrations, below the remedial action level, were detected in these samples (Figure 4). Sediments at FB-SD08 will be excavated and disposed off-site. The remaining remedial action level exceedances are marginal and human health carcinogenic risks after the removal of sediment from the FB-SD08 area will be on the order of  $10^{-6}$ .

PCB concentrations in sediment in the downstream EUs (2, 3, and 4) were generally lower than in EU6. In EU4, PCB concentrations in sediments were on the order of 1 to 10 mg/kg, with one marginal remedial action level exceedance (17 vs. 9.2 mg/kg; Figure 5). No remedial action is needed in EU4 since human health carcinogenic risks are on the order of  $10^{-6}$ . PCB sediment concentrations in EUs 2 and 3 were on the order of 1 mg/kg (Figure 6).

Overall, although PCB-impacted sediments were transported from EU8 to the downstream sections of Fields Brook, only one area (FB-SD08 in EU6) requires remedial action. In addition, the extensive PCB-related sediment and soil remediation work done by FBAG and MIC in EU-8 within the last year, and the proposed Brook relocation and reconstruction measures, are expected to minimize the risk of future contamination of sediments in EU-8 and the downstream mobilization of such sediments.

### 3.2 CVOCs/SVOCs

The distribution of CVOCs, HCB, and hexachlorobutadiene were examined since these were identified as risk-driving compounds (*i.e.*, have remedial action levels) and/or are marker compounds of Detrex Dense Non-Aqueous Phase Liquid (DNAPL).

#### CVOCs

CVOCs were detected in surface water and/or sediments in all EUs sampled (EUs 2, 3, 4, 5, and 6), with the highest concentrations and consistent detections being found in EUs 4 and 6 (Figures 10

<sup>4</sup> Note, the sediment CRG for PCBs was also marginally exceeded in one of the DS Tributary sediment samples collected near the confluence with Fields Brook (Figure 4). This is believed to be associated with sediment transport from Fields Brook and not related to an upstream source in DS Tributary since PCBs were not detected in all but one upstream sample.

through 13). CVOCs were also detected consistently in floodplain and subsurface soils in EU6. Key CVOC related findings are:

- High CVOC concentrations, (up to 1,195 mg/kg), were found in subsurface soils south of Fields Brook just west of State Road in EU6, on top of the lacustrine clay deposits, *i.e.*, approximately 8 to 10 feet below ground surface (bgs) (Figure 10). These elevated soil concentrations are clear indication that Detrex DNAPL has migrated along the top of the clay surface and accumulated in this area, a natural low spot in the clay's surface. Given the similarities in the depth of contamination (*i.e.*, top of clay) and the proximity of this area to the North Sewer (where DNAPL seeps were visible until FBAG installed a subsurface collection system) and the northern State Road Bridge abutment (where DNAPL is also believed to be present), it is likely that the DNAPL being found in these areas has a common origin, *i.e.*, Detrex source control ineffectiveness.
- CVOCs were also found in sediment and surficial soil samples collected in EU6, with the highest concentrations being found in the upstream portion, nearest to the North Sewer. These concentrations are attributable to former DNAPL seeps from the North Sewer that are now being contained by a subsurface trench installed by FBAG in the area.
- CVOCs were also detected in all surface water samples, including samples in EU2, located up to 6,400 feet downstream of State Road (Table 4 and Figure 13). In addition, a review of data from the prior rounds of sampling (2004, 2006) indicates similar findings. Although the detected concentrations are generally low, there are several troubling trends in these data (Figure 13):
  - In 2004/2006, total CVOC concentrations were significantly higher in EUs 6 and 4 in comparison to EU8, where levels were low to non-detectable.<sup>5</sup>
  - Total CVOC concentrations measured in EUs 6 and 4, both historically (2004/2006) and in the current round of sampling (2008), were relatively stable spatially and showed minimal attenuation with distance.
  - In fact, in the current round of sampling (2008), the highest concentrations were recorded downstream of the confluence of the DS Tributary and Fields Brook, *i.e.*, in EU-4.

This pattern of stable concentrations in EUs 6 and 4 could be due to the potential presence of small Detrex DNAPL globules in the Brook sediments that continue to act as a source to surface water. Given the absence or low detections of CVOCs in EU8 surface water, the former DNAPL seepage at the North Sewer appears to be likely source of this material. Alternatively there could be sub-surface DNAPL inputs along the Brook.

Overall, the CVOC data clearly indicate that Detrex DNAPL is present within the FWA (south of Brook near State Road) and continued to migrate into the FWA/SOU *via* a subsurface migration mechanism after the initial Detrex source control measures were implemented (*e.g.*, former DNAPL seepage at North Sewer). These contaminant inputs are affecting sediment, floodplain soil, and surface water quality in the SOU and FWA.

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<sup>5</sup> Note, no surface water samples were collected in EU8 in 2008 due to the remediation work that was ongoing at that time.

## *SVOCs*

HCB and hexachlorobutadiene, Detrex DNAPL marker compounds, were consistently detected in floodplain soils and/or sediments in EU's 4, 5, and 6 (Figures 7 and 8). The highest HCB concentrations in sediment were found in EU-6, with an exceedance of the sediment HCB remedial action level noted just downstream of the confluence with DS Tributary (Figure 7). This localized sediment deposition area in EU-6 is targeted for remediation since elevated PCB concentrations had also been detected at this sampling location.

## **4 Conclusions**

The comprehensive soil, sediment, and surface water quality sampling undertaken to assess environmental conditions in EU's 2 through 6 of Fields Brook indicate:

- PCBs were detected in floodplain soils and/or sediments in EU's 2, 3, 4, 5 and 6, with the highest concentrations recorded in EU6. No soil remedial action level exceedances were noted. The PCBs sediment remedial action level was exceeded in 6 samples in EU6, one sample in EU5 (believed to be backflow from EU6), and one sample in EU4. However, with the exception of one localized area in EU6, the other remedial action level exceedances were marginal (up to two times the remedial action level), and do not pose a significant risk to human health and the environment. The localized area in EU6 with the elevated PCBs will be remediated.
- The source of the PCBs detected in EU-6 and the downstream section of Fields Brook appears to have been PCB-impacted sediments/soils formerly present in EU8. The extensive PCB-related sediment and soil remediation work done by FBAG and MIC in EU-8 within the last year and the proposed Brook relocation and reconstruction measures, are expected to minimize the risk of future contamination of sediments in EU-8 and the downstream mobilization of such sediments.
- The ineffectiveness of Detrex's source control measures is leading to clearly discernable effects on sediment and surface water quality in EU6 and downstream portions of Fields Brook.
  - Elevated CVOC concentrations (up to 1,195 mg/kg) were detected in subsurface soils (8 to 10 feet bgs) south of Fields Brook and west of State Road. These data indicate that Detrex DNAPL has migrated along the top of the lacustrine clay surface into this area, which is located near the North sewer, where Detrex DNAPL seeps were discharging into Fields Brook until a subsurface containment trench was installed by FBAG.
  - CVOCs associated with Detrex DNAPL were detected in all 12 surface water samples collected in Fields Brook with the most downstream sample obtained over 6,400 feet from State Road. The CVOC concentrations were spatially stable in EU's 6 and 4, a trend that may be attributable to the presence of Detrex DNAPL globules in sediments that continue to feed the overlying water column, thus resulting in relatively constant surface water concentrations.

Overall, the remedial measures implemented to-date in EU-8 by FBAG and MIC and the proposed actions (*i.e.*, Brook restoration and relocation), are expected to offer long term protection of EU8 Brook sediments. The source control improvements undertaken at Detrex and MIC (*e.g.*,

installation of MIC and Detrex interceptor trenches) are also expected to be beneficial to the Brook. However, Detrex's source control measures along the western portion of their property, which are a subject of discussion between Detrex and US EPA, need to be adequately investigated/supplemented.

We hope that this summary report provides you a useful overview of the data collected at Fields Brook in the recent months. We look forward to meeting with you and your colleagues. Please feel free to call if you have any questions or comments.

Yours truly,

GRADIENT CORPORATION

A handwritten signature in black ink, appearing to read "Manu Sharma".

Manu Sharma, P.E.  
Principal

**Table 1**  
**Sample Summary - June and August 2008**  
**Fields Brook Superfund Site, Ashtabula, Ohio**

Matrix :	Sediment <sup>1</sup>				Soil <sup>2</sup>			Surface Water <sup>3</sup>		
	Date Sampled :	Jun-08		Aug-08	Total Soil Samples	Jun-08		Total Surface water Samples	Jun-08	
		Total Sediment Samples	FBAG Routine Monitoring Samples	Millennium Proposed Samples		Supplemental Samples	FBAG Routine Monitoring Samples		FBAG Routine Monitoring Samples	Millennium Proposed Samples
EU-2	1	1	0	0	7	7	0	1	1	0
EU-3	7	3	0	4	4	4	0	3	3	0
EU-4	17	3	0	14	3	3	0	3	3	0
EU-5	8	0	0	8	0	0	0	0	0	0
EU-6	26	5	11	10	32	5	27	5	5	0

*Notes:*

1 - All FBAG, Millennium and supplemental sediment samples were analyzed for PCBs. All FBAG and select Millennium sediment samples were also analyzed for the full list of volatile and semi-volatile organic compounds, metals and radionuclides. EU-5 supplemental sediment samples were analyzed for the full list of volatile and semi-volatile organic compounds.

2 - All FBAG and Millennium soil samples were analyzed for PCBs. All FBAG and select Millennium soil samples were also analyzed for select volatile and semi-volatile organic compounds, metals and radionuclides.

3 - FBAG surface water samples were analyzed for PCBs, volatile and semi-volatile organic compounds, metals and radionuclides.

Table 2  
Fields Brook-Millennium 2008 Sampling Event  
Summary of Analytical Results for Soil Samples

List of Compounds	CRGs	EU-2						EU-3					
		FB-SS01	FB-SS02	FB-SS03	FB-SS04	FB-SS05	FB-SS06	FB-SS07	FB-SS08	FB-SS09	FB-SS10	FB-SS11	
VOCs (units are in $\mu\text{g}/\text{kg}$ )	Residential	Industrial											
Cis-1,2-Dichloroethylene													
Trichloroethylene													
Tetrahydroethylene													
1,1,2,2-Tetrabromodiolethane													
Total Chlorinated VOCs *													
SVOCs (units are in $\mu\text{g}/\text{kg}$ )													
Total Chlorobiphenylene													
Hexachlorobiphenylene													
Heptachlorobiphenylene													
PCBs (units are in $\mu\text{g}/\text{kg}$ )													
Total PCBs	6	50	ND	ND	0.037	0.81	ND	ND	ND	0.33	0.89	1.2	0.03

Notes :

Blank cells - Compound was not analyzed.

ND - Non-detect.

\* - Only the selected VOCs listed above were included in the Total Chlorinated VOCs calculation.

Data in bold indicate exceedances of CRGs.

(1). Laboratory analysis "PB-SS" is a reference sample (in vacuo) instead of a soil sample which has a very short list (3 VOC's, 4 SVOC's and 2 metals). Data entered in this table was limited to the short list compound.

(2). There is no "PB-SS" sample for 2008 event due to the extensive soil sampling in EU-6.

Residential - FB-SS01 thru FB-SS11.

Table 2  
Fields Brook-Millennium 2008 Sampling Event  
Summary of Analytical Results for Soil Samples

List of Compounds	EU-4		EU-6																		
	FB-SS12 FB-SS13		FB-SS14		FB-SS15 FB-SS16 <sup>1</sup>		FB-SS17		FB-SS18		ML-SS101		ML-SS102		ML-SS11		ML-SS13		ML-SS14		
	CRGs	Industrial	Residential	Industrial	Residential	Industrial	Residential	Industrial	Residential	Industrial	Residential	Industrial	Residential	Industrial	Residential	Industrial	Residential	Industrial	Residential	Industrial	Residential
VOCs (units are in ng/g)																					
C6-1,2-Dibromoethane																					
Trichloroethane																					
Tetrahydroethylene																					
1,1,2,2-Tetrachloroethane																					
Total Chlorinated VOCs*																					
SVOCs (units are in ng/g)																					
Hexachlorobutadiene																					
Hexachlorobenzene																					
PCBs (units are in ng/g)																					
Total PCBs	6	50	36	0.32	0.08	ND	10	2.5	1.5	ND	0.57	5.1	4.7	0.69	14	200	0.50	18	6.3	1.7	0.50

Notes :

Bare soil - Compound was not analyzed.

ND - Non-detect.

\* Only the select VOCs listed above were included in the Total Chlorinated VOC calculation.

Data in bold indicate exceedances of CTCs.

(1) Laboratory analyzed FB-SS-16 as a sediment sample (heterogeneous VOCs, SVOCs, metals) instead of a soil sample and metals.

(2) There is no FB-SS19 sample the 2008 event due to the extensive soil sampling in EU-6.

Residential -FB-SS19 then FB-SS11.

**Table 2**  
Fields Brook-Millennium 2008 Sampling Event  
Summary of Analytical Results for Soil Samples

List of Compounds	EU-6											
	CRGs	ML-SS16	ML-SS17	ML-SS18	ML-SS19	ML-SS10	ML-SS11	ML-SS12	ML-SS13	ML-SS14	ML-SS15	ML-SS16
VOCs (units are in ng/g)	Residential	Industrial	0608-72	0608-46	0608-48	0608-48	0608-36	0608-48	0608-52	0608-52	0608-120	0608-120
Cs-1,2-Dibromoethane		0.53			0.013		0.21	0.019	0.62	1.3	6.3	4.7
Tribromochloroethane		0.21			42		50	0.016	2	25	3.8	600
Tetrahydrofuran		0.18			84		36	0.014	1.7	18	9.6	590
1,1,2,2-Tetrachloroethane		ND			ND		ND	ND	ND	ND	ND	ND
Total Chlorinated VOCs *		0.920			0.0076		0.0076	0.0031	0.0038	0.0078	0.0031	0.013
SVOCs (units are in ng/g)		2.6			126		86	0.040	4.3	44	20	1.95
Hexachlorobutadiene		30			0.7		ND	ND	1.4	1.4	2.5	0.43
Heptachlorobutadiene		200			0.32		ND	0.25	1.4	1.2	2.3	ND
Per-Ba (units are in ng/g)		6			14		26	12	0.93	ND	50	0.60
Total PCBs		50			0.50		0.25	5.2	6.8	2.5	1.4	0.46
												0.11

Notes:

\*Benzene - Compound was not analyzed.

ND - Not detected.

\* Only the select VOCs listed above were included in the Total Chlorinated FOC calculation.

Data in bold indicate exceedance of CRGs.

(1) Laboratory analysis of FB-SS16 as a sediment sample (numerous VOCs, SVOCs, metals) instead of a soil sample.

(2) There is no FB-SS19 sample the 2008 event due to the extensive soil sampling in EU-6.

Residential - FB-SS1 thru FB-SS11.

Table 3  
Fields Brook-Millennium 2008 Sampling Event  
Summary of Analytical Results for Sediment Samples

List of Compounds	EU-2						EU-3						EU-4					
	FB-SD01 0608	FB-SD02 0608	FB-SD03 0608	FB-SD04 0608	FB-SD05 0608	FB-SD06 0608	FB-SD07 0608	FB-SD08 0608	EU4 CRCs 0608	EU4 SD05 0608	EU4 SD06 0608	EU4 SD07 0608	EU4 SD08 0608	FB-SD11 0608	FB-SD12 0608	FB-SD13 0608		
<b>VOCs</b> <i>(units are in mg/kg)</i>																		
Cis-1,2-Dichloroethane	0.0017	0.0022	0.0082	0.0074										ND	0.0057	0.34		
Trichloroethene	0.0032	0.0042	ND	ND										ND	0.0113	ND		
Tetrachloroethene	0.0026	ND	ND	ND										ND	0.0037	0.11		
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND										ND	0.0014	ND		
Total Chlorinated VOCs *	0.0075	0.0064	0.0082	0.0074										ND	0.024	0.45		
<b>SVOCs</b> <i>(units are in mg/kg)</i>																		
Hexasilicobutadiene	ND	0.27	ND	ND										40	0.84	0.24		
Hexasilicobenzene	ND	39	18	0.27	0.44									3.8	1.1	1.7		
PCBs														0	0	0		
Total PCBs	1.6	4.7	2.8	1.7	3.5	2	0.8	1.4	1.1	9.2	17	2.8	6	8.4	5.6	1.2		

*Notes:*

Blank - i.e., Compound was not analyzed.

ND - Not-detect.

\* Only the select VOCs listed above were included in the

Total Chlorinated OC calculation.

Data in bold indicate exceedances of CRGs.

**Table 3**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Sediment Samples**

List of Compounds	EU-4										EU-5										
	FB-SD34 0808	FB-SD35 0808	FB-SD36 0808	FB-SD37 0808	FB-SD38 0808	FB-SD39 0808	FB-SD40 0808	FB-SD41 0808	FB-SD42 0808	FB-SD43 0808	FB-SD44 0808	EU5 CRGs	DS-SD01 0808	DS-SD02 0808	DS-SD03 0808	DS-SD04 0808	DS-SD05 0808	DS-SD06 0808	DS-SD07 0808	DS-SD08 0808	
VOCs <i>(units are in mg/kg)</i>													ND	ND	ND	0.015	0.0051	1.1	0.051	0.0	
Cis-1,2-Dichloroethene													ND	ND	ND	0.084	0.0947	0.341	0.0096	ND	
Trichloroethylene													1854	ND	ND	ND					
Tetrachloroethene													392	ND	ND	ND	0.035	0.0024	0.11	ND	ND
1,1,2,2-Tetrachloroethane													102	ND	ND	ND	ND	ND	0.064	ND	ND
Total Chlorinated VOCs *													ND	ND	ND	0.13	0.012	1.3	0.061	0.0030	
SVOCs <i>(units are in mg/kg)</i>																					
Hexachlorobutadiene													0.34	ND	0.63	0.44	1	0.64	7.8	21	
Hexachlorobenzene													39	3.9	0.27	5.7	4.7	18	1.3	6	11
PCBs <i>(units are in mg/kg)</i>																					
Total PCBs	1.4	7.3	1.3	2.8	8.6	1.2	1.6	2.7	2.1	4.2	1.5	6.4	14							0.89	

Notes:

Blank cells - Compound was not analyzed.

ND - Non-detect.

\* Only the select VOCs listed above were included in the

Total Chlorinated VOC calculation.

Data in bold indicate exceedances of CRGs.

**Table 3**  
Fields Brook-Millennium 2008 Sampling Event  
Summary of Analytical Results for Sediment Samples

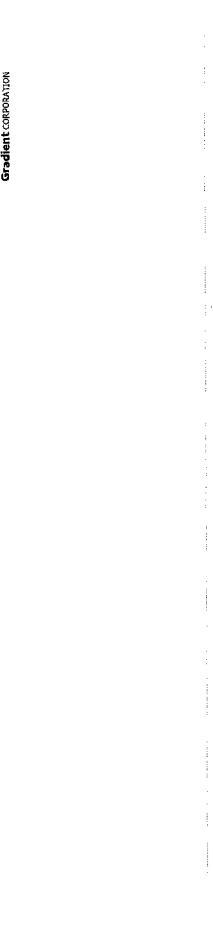
List of Compounds	EU-6									
	FB-SD08	FB-SD09	FB-SD10	FB-SD11	FB-SD12	FB-SD13	FB-SD14	FB-SD15	FB-SD16	FB-SD17
VOCs <small>(units are in mg/kg)</small>	0.608	0.608	0.608	0.608	0.608	0.608	0.608	0.608	0.608	0.608
Cis-1,2-Dichloroethylene	0.27	0.08	0.003	0.0023	0.11					
Tetrachloroethene	1654	0.11	0.039	ND	ND	0.039				
Tetrachloroethane	392	0.27	0.034	ND	ND	0.047				
1,1,2,2-Tetrachloroethane	102	0.0053	0.0026	ND	ND	ND				
Total Chlorinated VOCs *	0.66	0.16	0.0050	0.0023	0.48					
SVOCs <small>(units are in mg/kg)</small>										
Hexachlorobutadiene	78	0.77	ND	ND	0.76					
Heptachlorobutadiene	45	53	2.2	0.58	0.76	0.83				
PCBs <small>(units are in mg/kg)</small>	7	130	17	1.6	8.5	2.2	2.7	16.81	1.8	4.3
Total PCBs										2.8
										12

## Notes:

Blank cells - Compound was not analyzed.

ND - Non-detect.

\* Only the seven VOCs listed above were included in the Total Chlorinated VOCs calculation.  
Data in bold indicate exceedances of CRGs.



**Table 3**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Sediment Samples**

List of Compounds	EU-6										
	ML-SD01 0608-02	ML-SD02 0608-02	ML-SD03 0608-02	ML-SD04 0608-02	ML-SD05 0608-02	ML-SD06 0608-02	ML-SD07 0608-02	ML-SD08 0608-02	ML-SD09 0608-02	MLSD 10 0608-02	ML-SD11 0608-02
<b>VOCs</b> (units are in mg/kg)											
<chem>C=C(Cl)C(Cl)=C</chem>	0.91	0.024	0.029	0.016		2.3	0.14				
<chem>CCl=CCl=CCl=CCl</chem>	0.031	0.011	0.034	0.0066		3.6	0.26				
<chem>CCl=CCl=CCl=CCl=CCl</chem>	0.058	0.0052	0.027	ND		1.8	0.19				
<chem>CCl=CCl=CCl=CCl=CCl=CCl</chem>	0.022	0.002	0.0021	ND		ND	ND				
Total Chlorinated VOCs *	1.0	0.042	0.037	0.023		7.7	0.59				
<b>SVOCs</b> (units are in mg/kg)											
<chem>CCl=CCl=CCl=CCl=CCl=CCl=CCl=CCl</chem>	ND	ND	ND	0.4	ND		ND				
<chem>CCl=CCl=CCl=CCl=CCl=CCl=CCl=CCl=CCl</chem>	0.36	0.5	0.35	0.8	0.28		0.42				
<b>PCBs</b> (units are in mg/kg)											
Total PCBs	2.1	3	2.4	6.9	1.5	3.6	1.7	4.5	2.3	3.9	2.3

Notes:

Blank cells - Compound was not analyzed

ND - Non-detect.

\* - Only the select VOCs listed above were included in the

Total Chlorinated VOC calculation.

Data in bold indicate exceedances of CRGs.

**Table 4**  
**Fields Brook 2008 Sampling Event**  
**Summary of Analytical Results for Surface Water Samples**

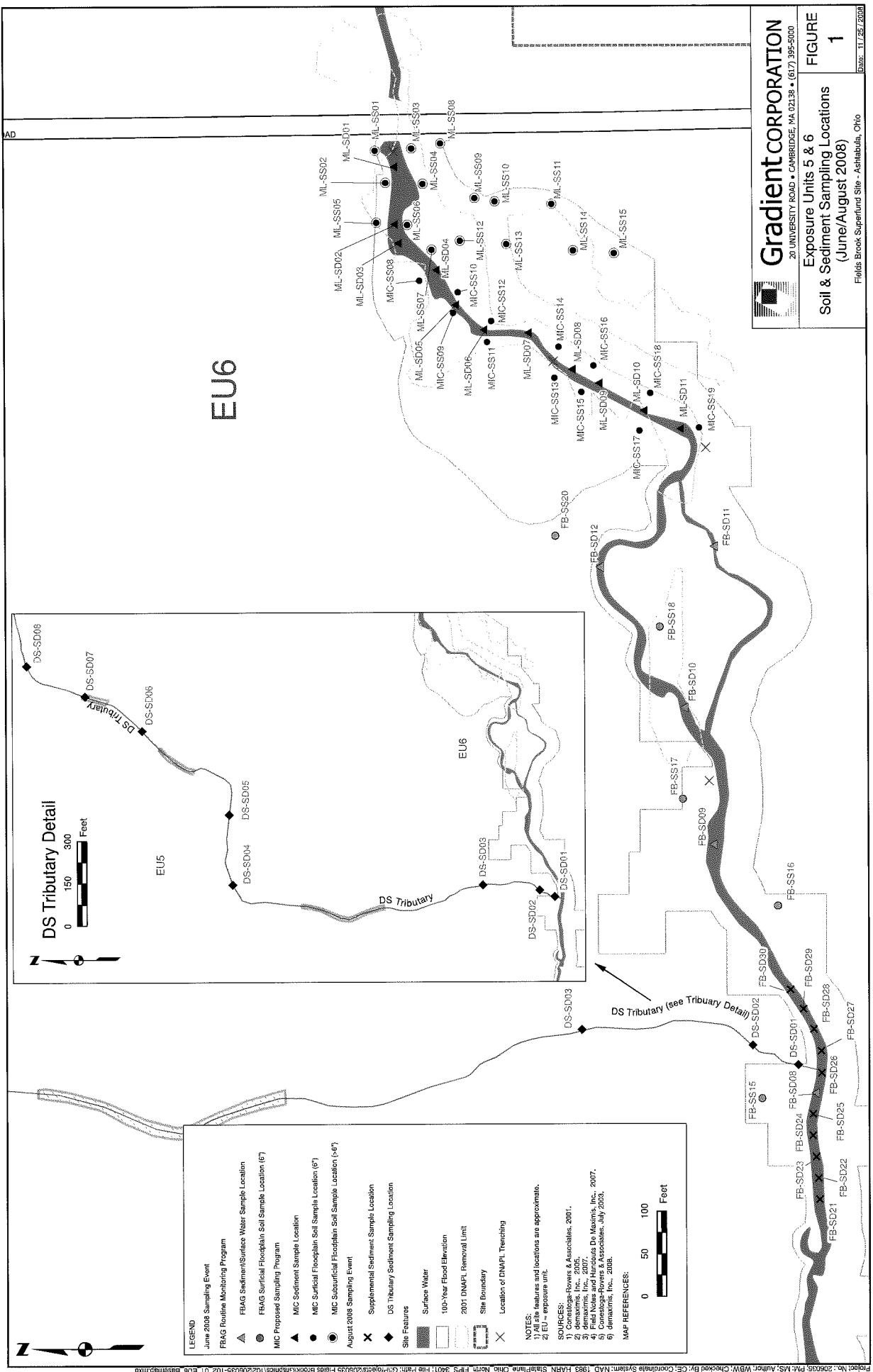
List of Compounds		EU-2		EU-3			EU-4			EU-6				
		FB-SW01 0608	FB-SW02 0608	FB-SW03 0608	FB-SW04 0608	FB-SW05 0608	FB-SW06 0608	FB-SW07 0608	FB-SW08 0608	FB-SW09 0608	FB-SW10 0608	FB-SW11 0608	FB-SW12 0608	
VOCs	(units are in µg/L)													
	Cis-1,2-Dichloroethene	1.8	3	3.7	4.1	9.4	9.2	9.2	4.9	4.5	5.1	3.9	5.1	
	Trichloroethene	1.3	2.5	2.8	3.8	7.3	6.9	7.3	5.2	4.9	5.2	4.8	4.6	
	Tetrachloroethene	0.54	1.1	1.2	1.5	2.8	2.6	2.7	1.8	1.6	1.7	1.7	1.5	
	1,1,2,2-Tetrachloroethane	1	2.2	3	1.2	5.4	4.6	4.4	4.5	1	1.1	0.84	0.98	
	Total Chlorinated VOCs*	4.6	8.8	11	11	25	23	24	16	12	13	11	12	
SVOCs	(units are in µg/L)													
	Hexachlorobutadiene	ND												
	Hexachlorobenzene	ND												
PCBs	(units are in µg/L)													
	Total PCBs	ND												

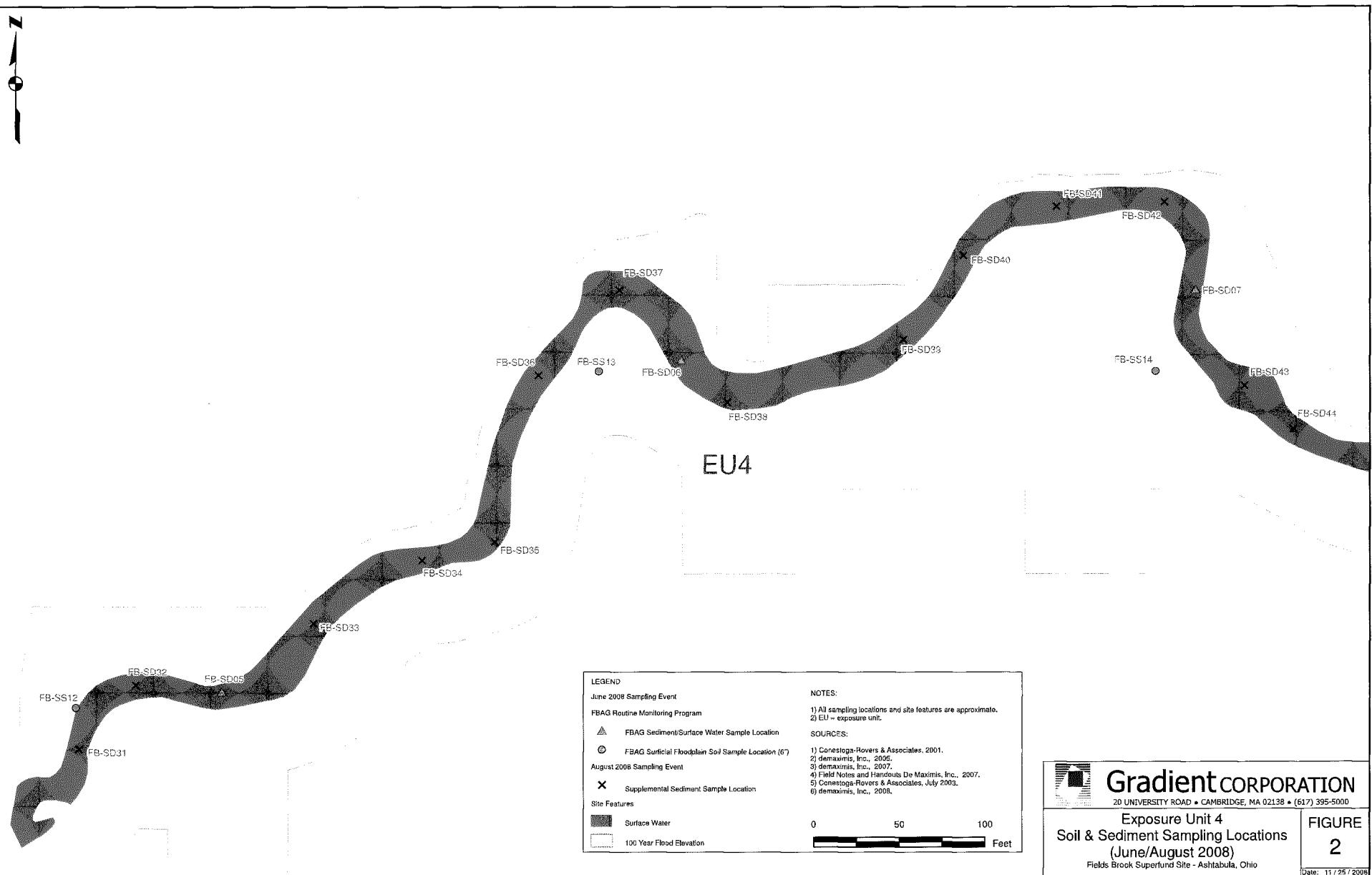
Notes:

Blank cells - Compound was not analyzed.

ND - Non-detect.

\* - Only the select VOCs listed above were included in the Total Chlorinated VOC calculation.

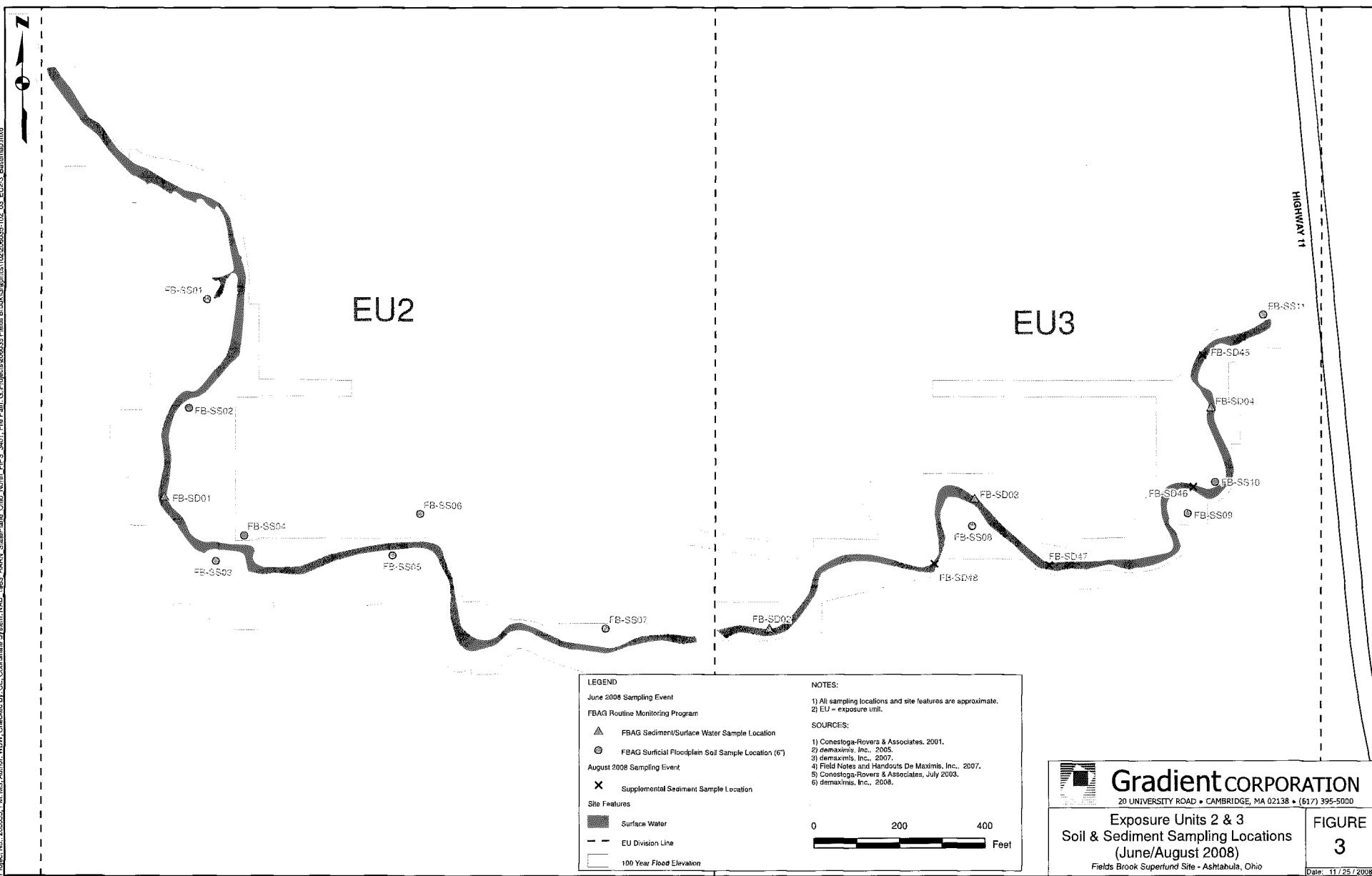




**Gradient CORPORATION**  
20 UNIVERSITY ROAD • CAMBRIDGE, MA 02138 • (617) 395-5000  
Exposure Unit 4  
Soil & Sediment Sampling Locations  
(June/August 2008)  
Fields Brook Superfund Site - Ashtabula, Ohio

**FIGURE  
2**

Date: 11/25/2008

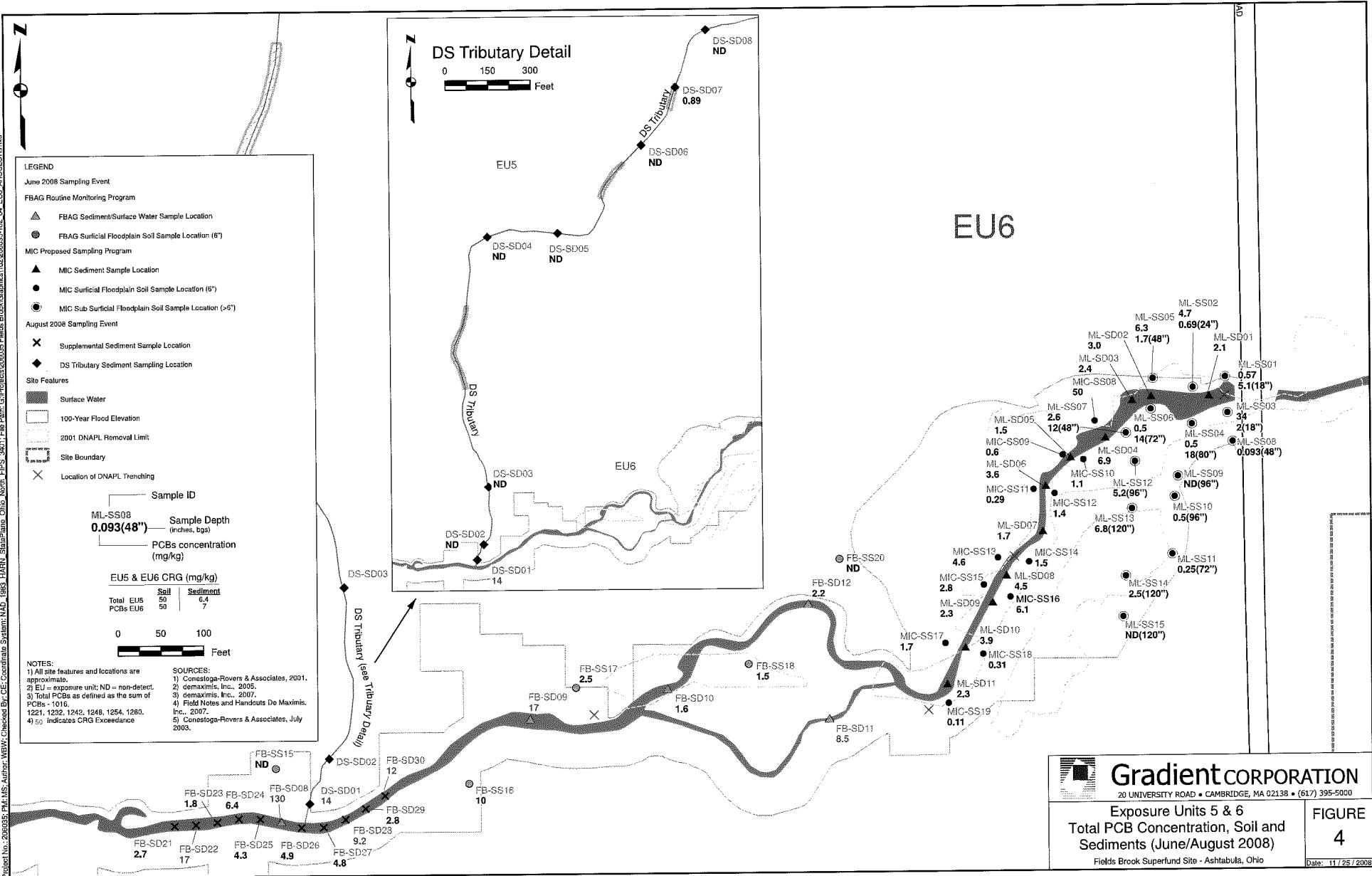


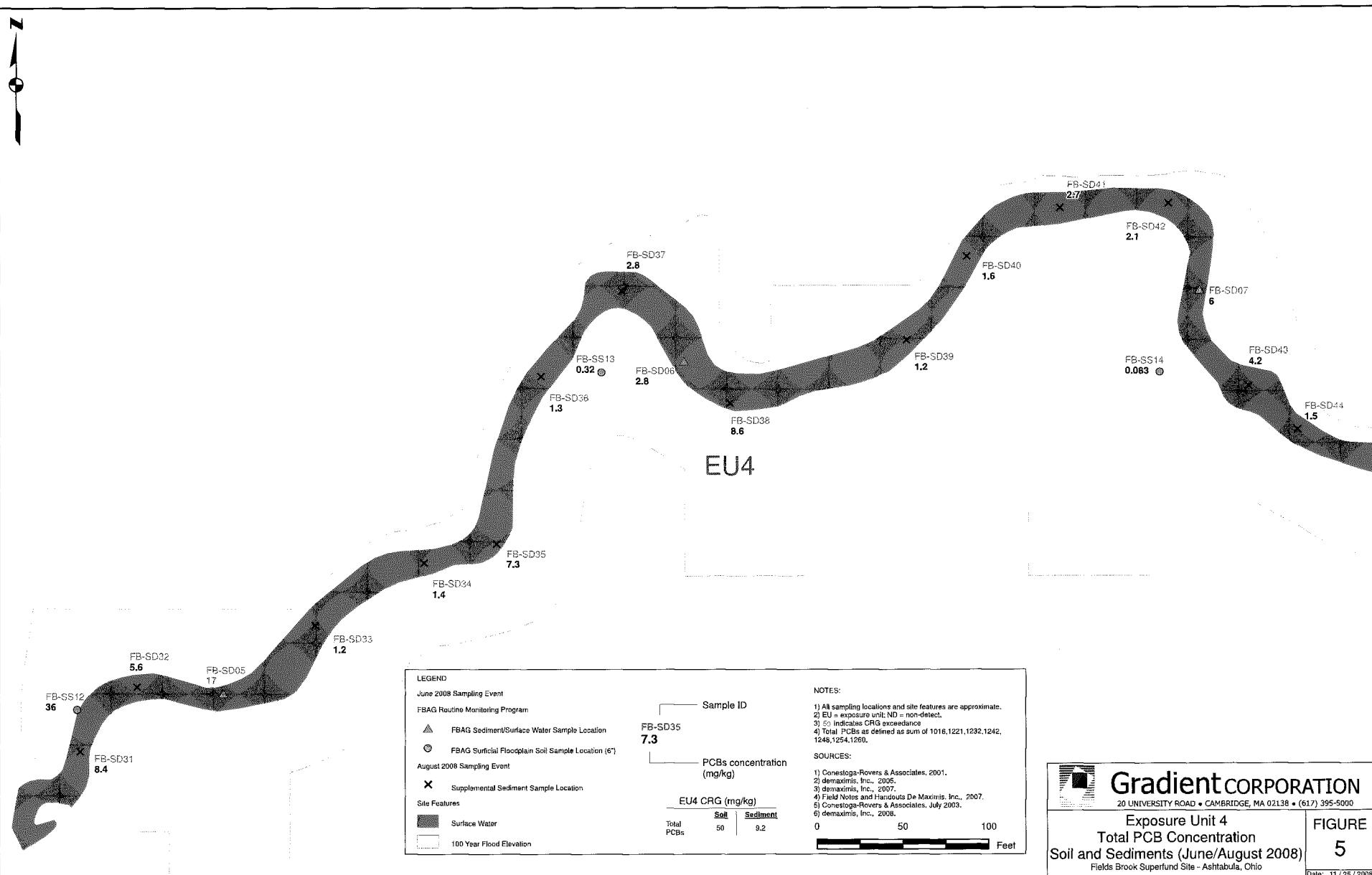
**Gradient CORPORATION**  
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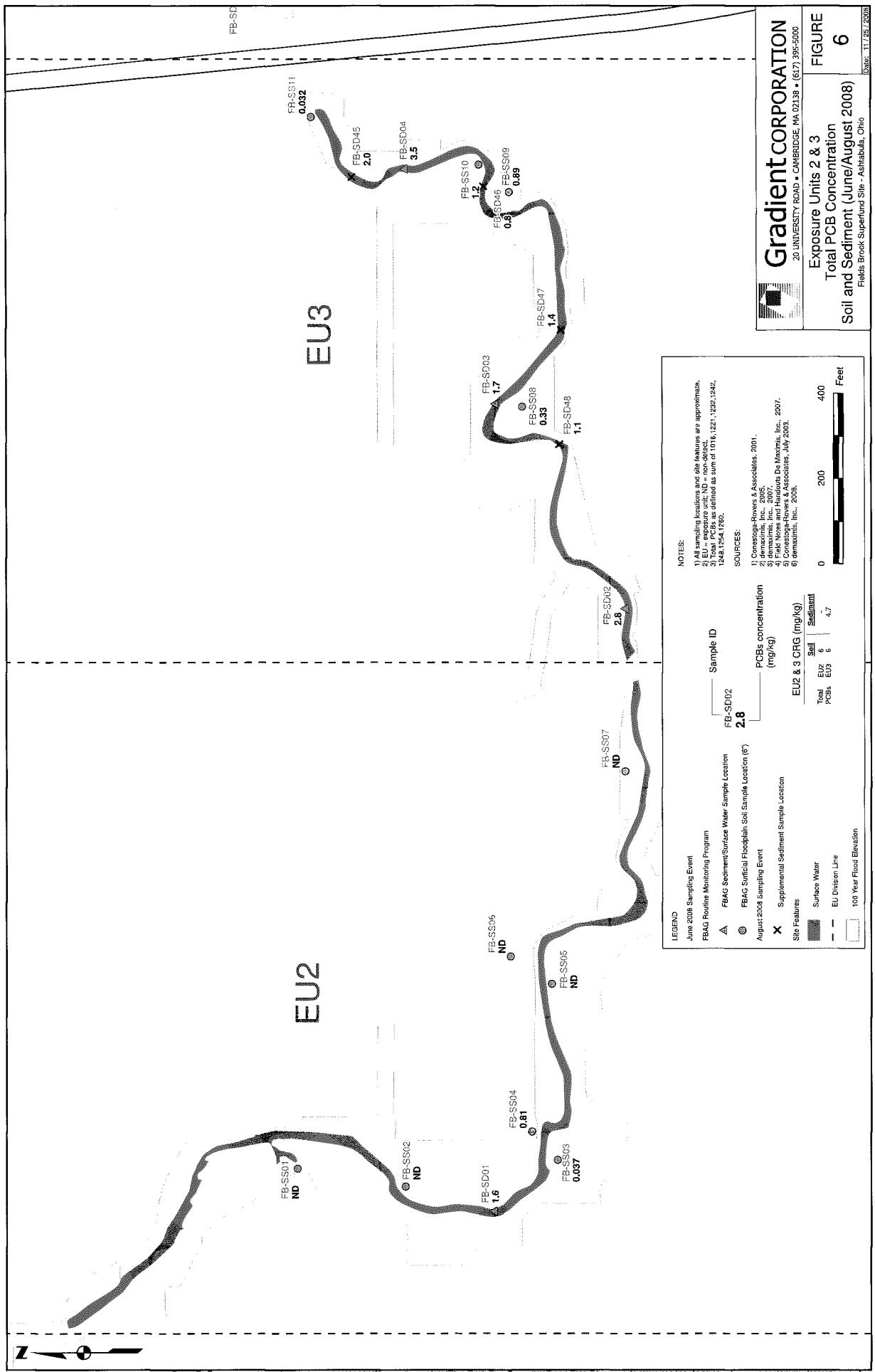
**Exposure Units 2 & 3**  
**Soil & Sediment Sampling Locations**  
**(June/August 2008)**  
Fields Brook Superfund Site - Ashtabula, Ohio

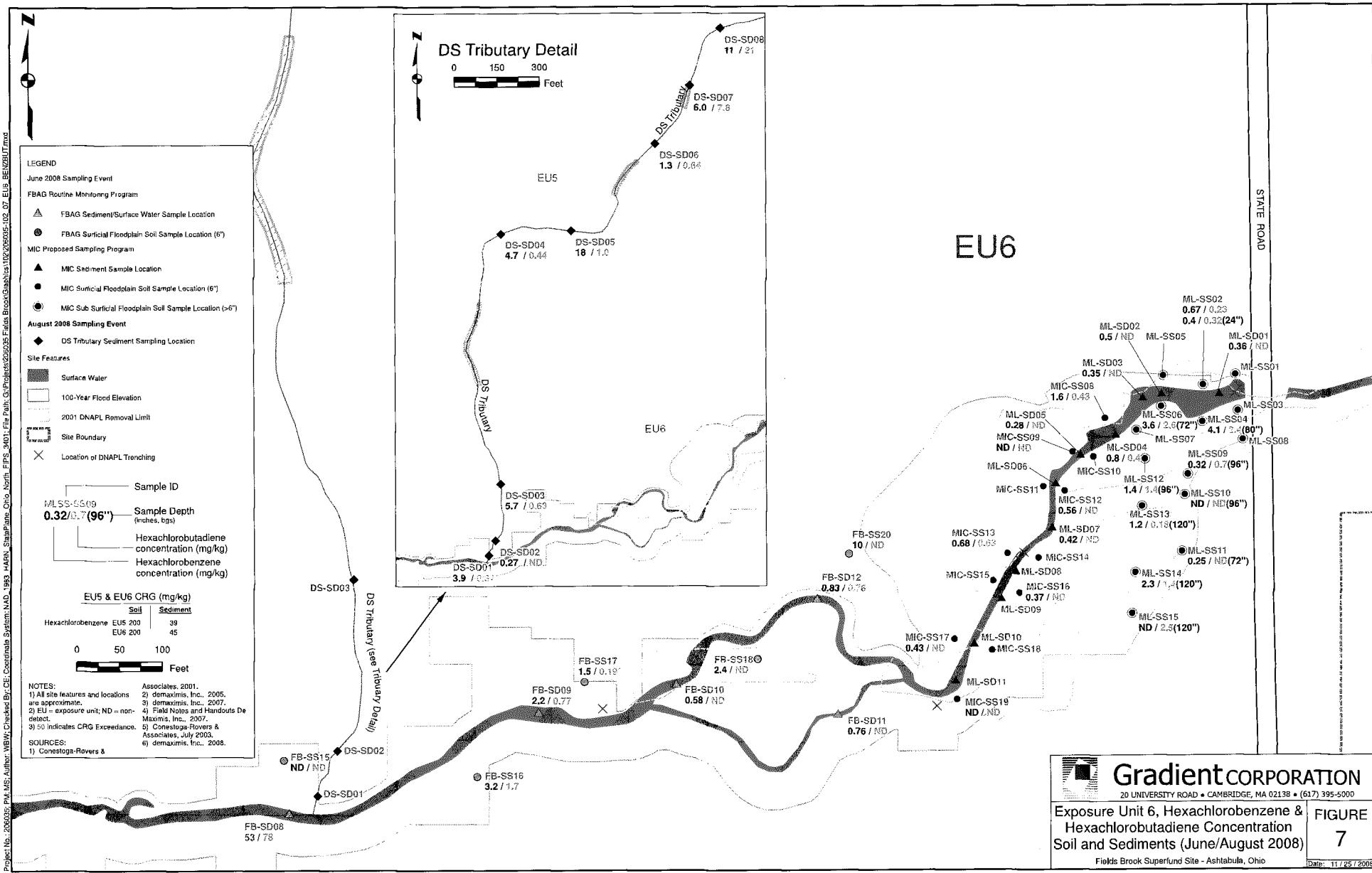
**FIGURE  
3**

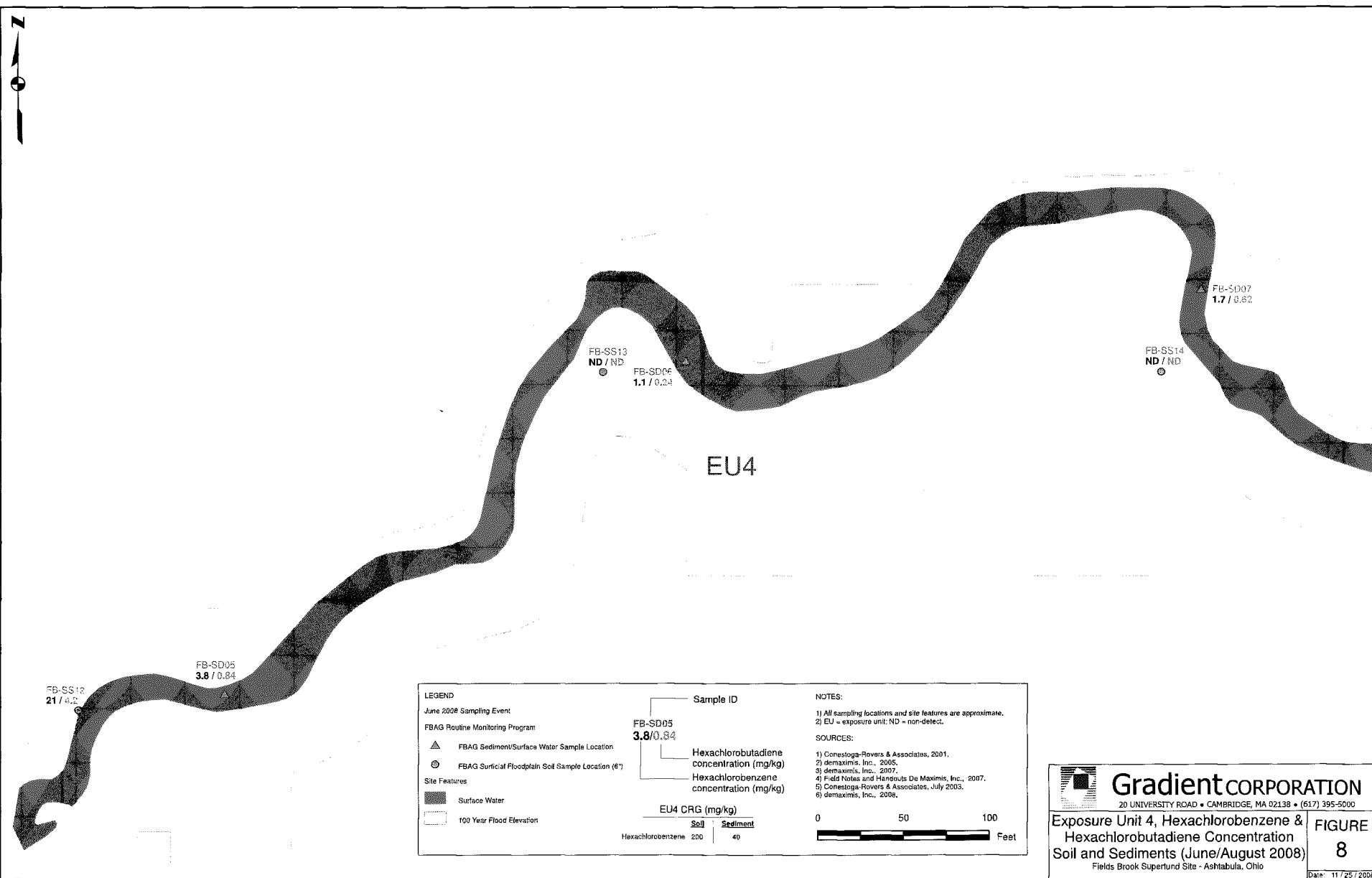
Date: 11/25/2008











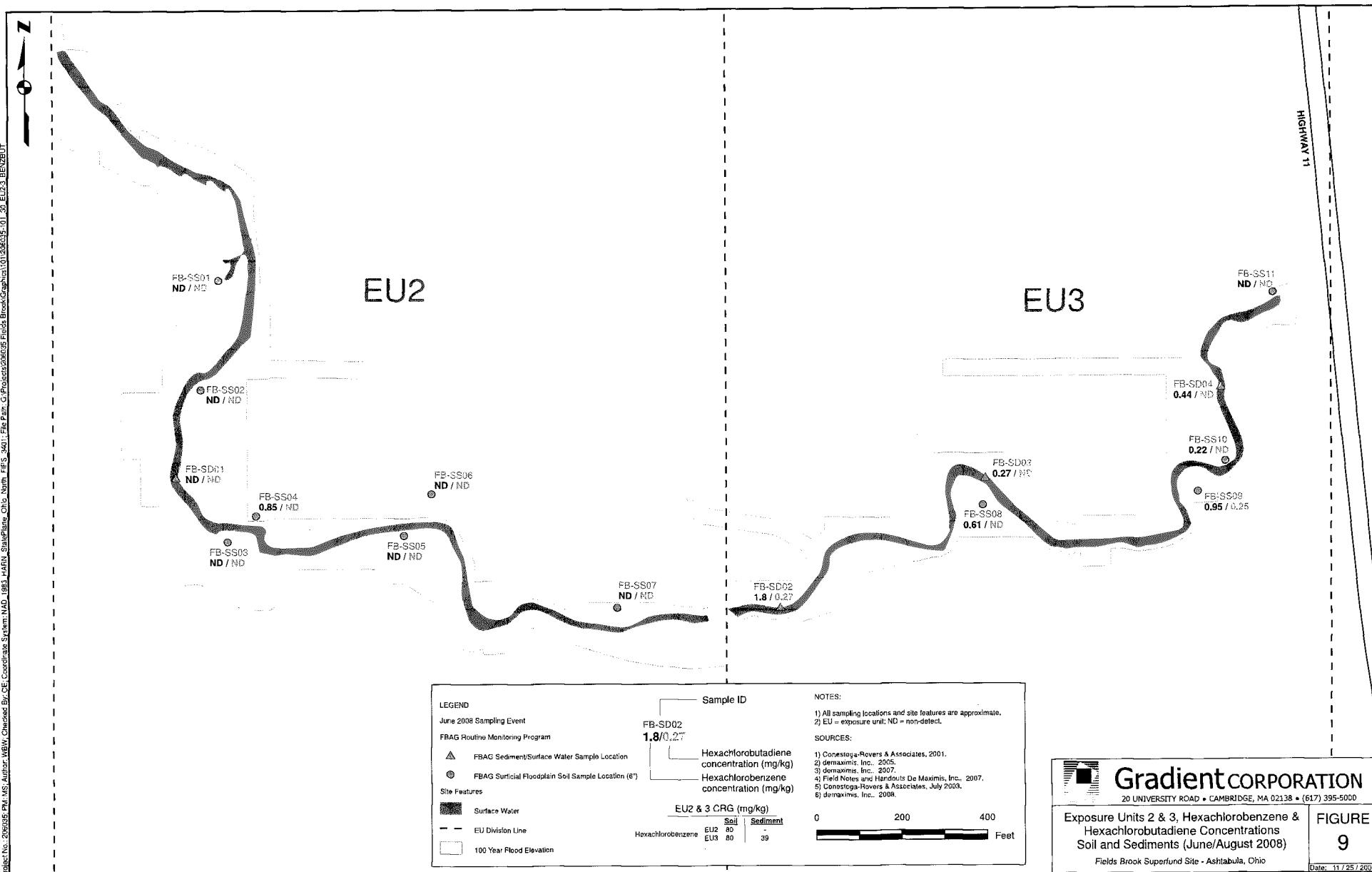
**Gradient CORPORATION**  
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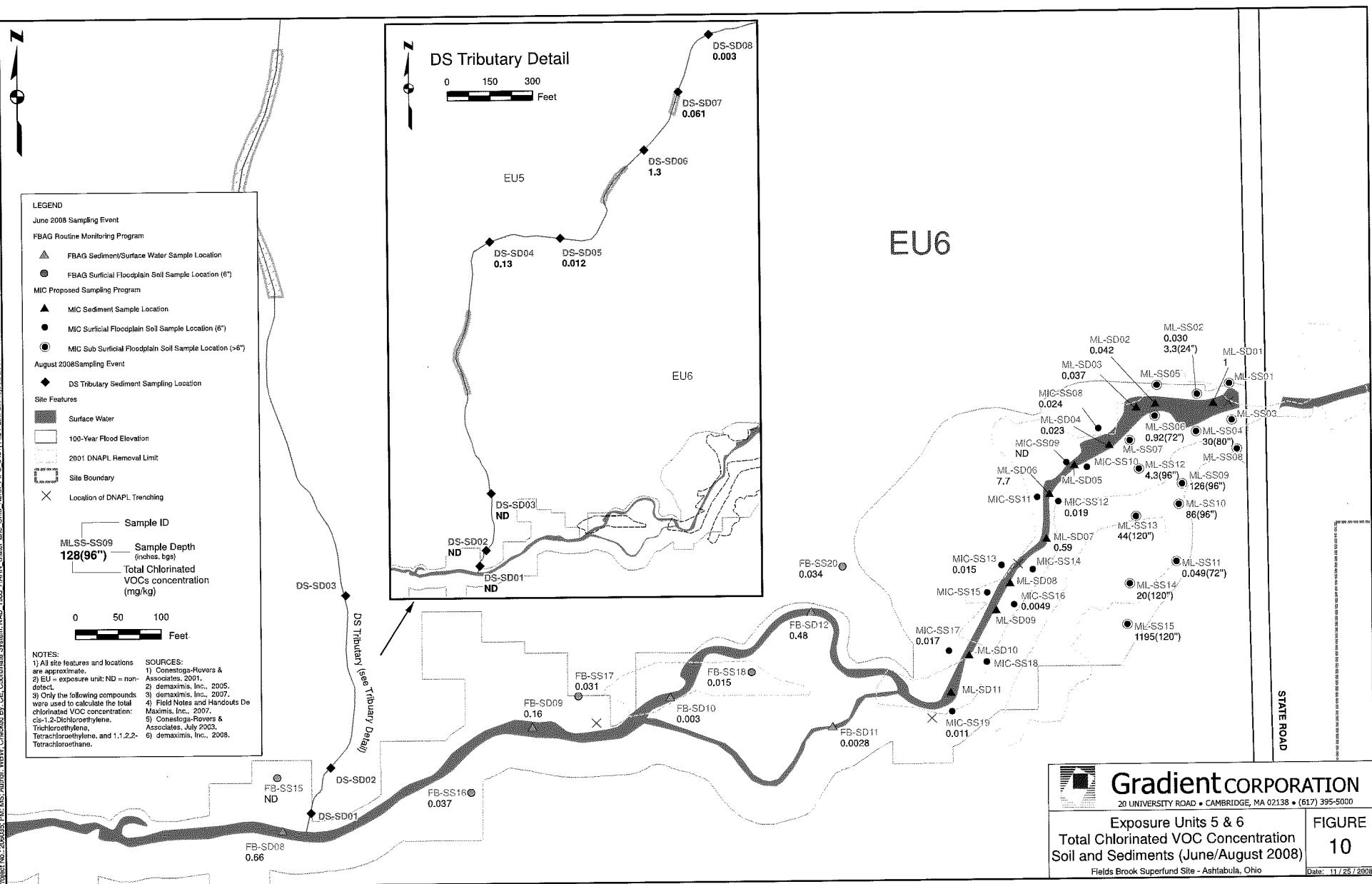
**Exposure Unit 4, Hexachlorobenzene & Hexachlorobutadiene Concentration Soil and Sediments (June/August 2008)**

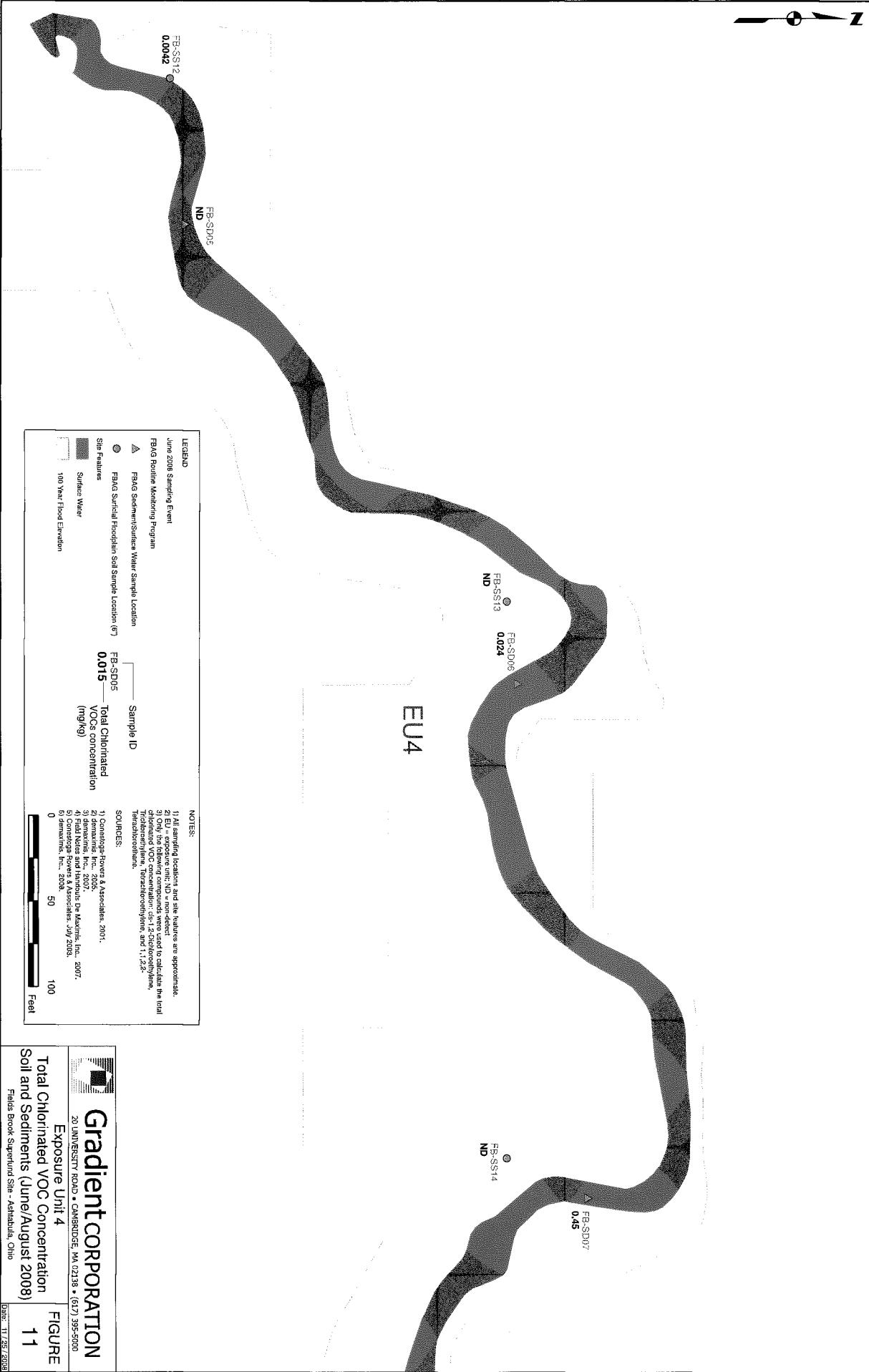
Fields Brook Superfund Site - Ashtabula, Ohio

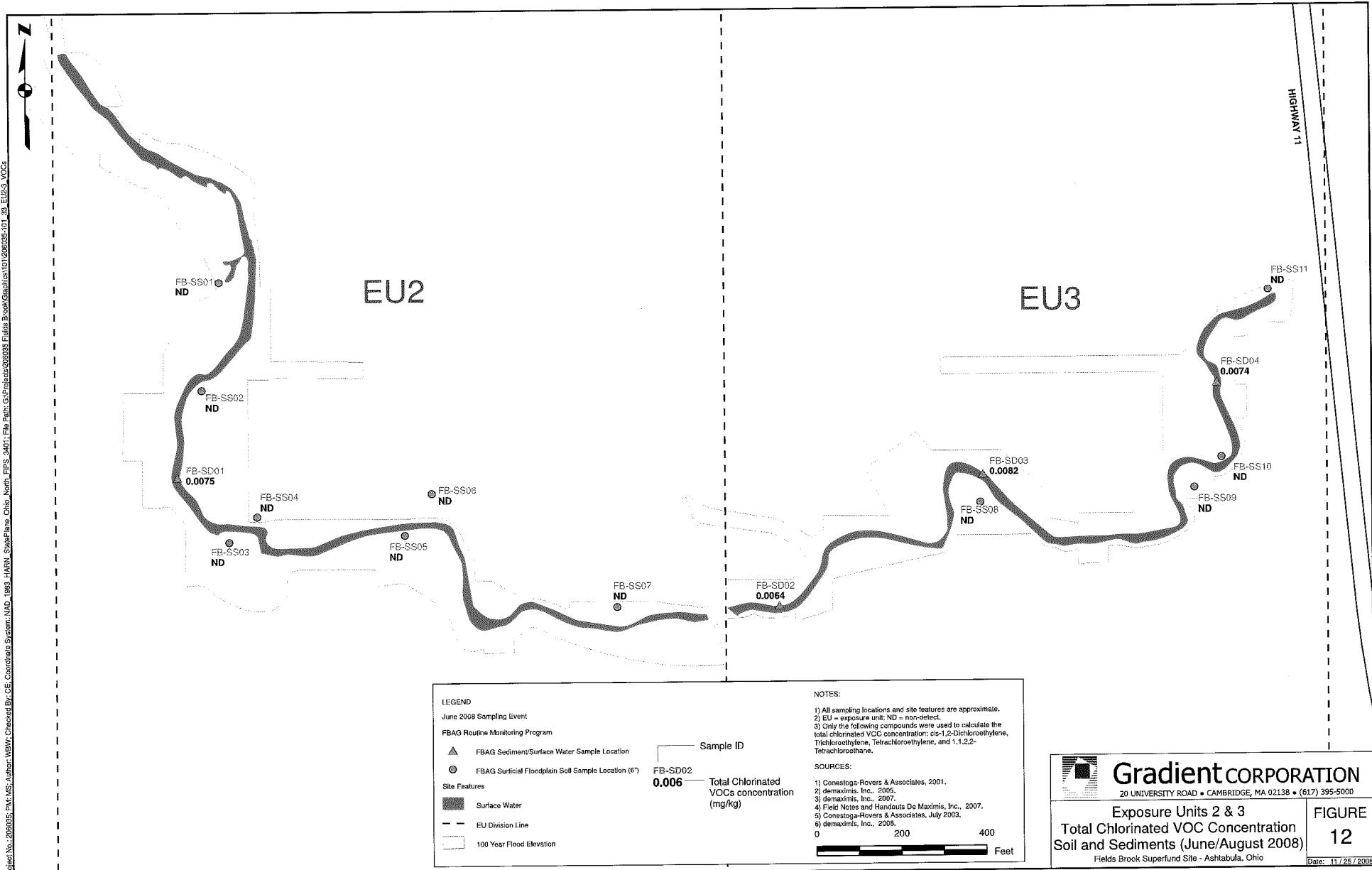
**FIGURE 8**

Date: 11/25/2008

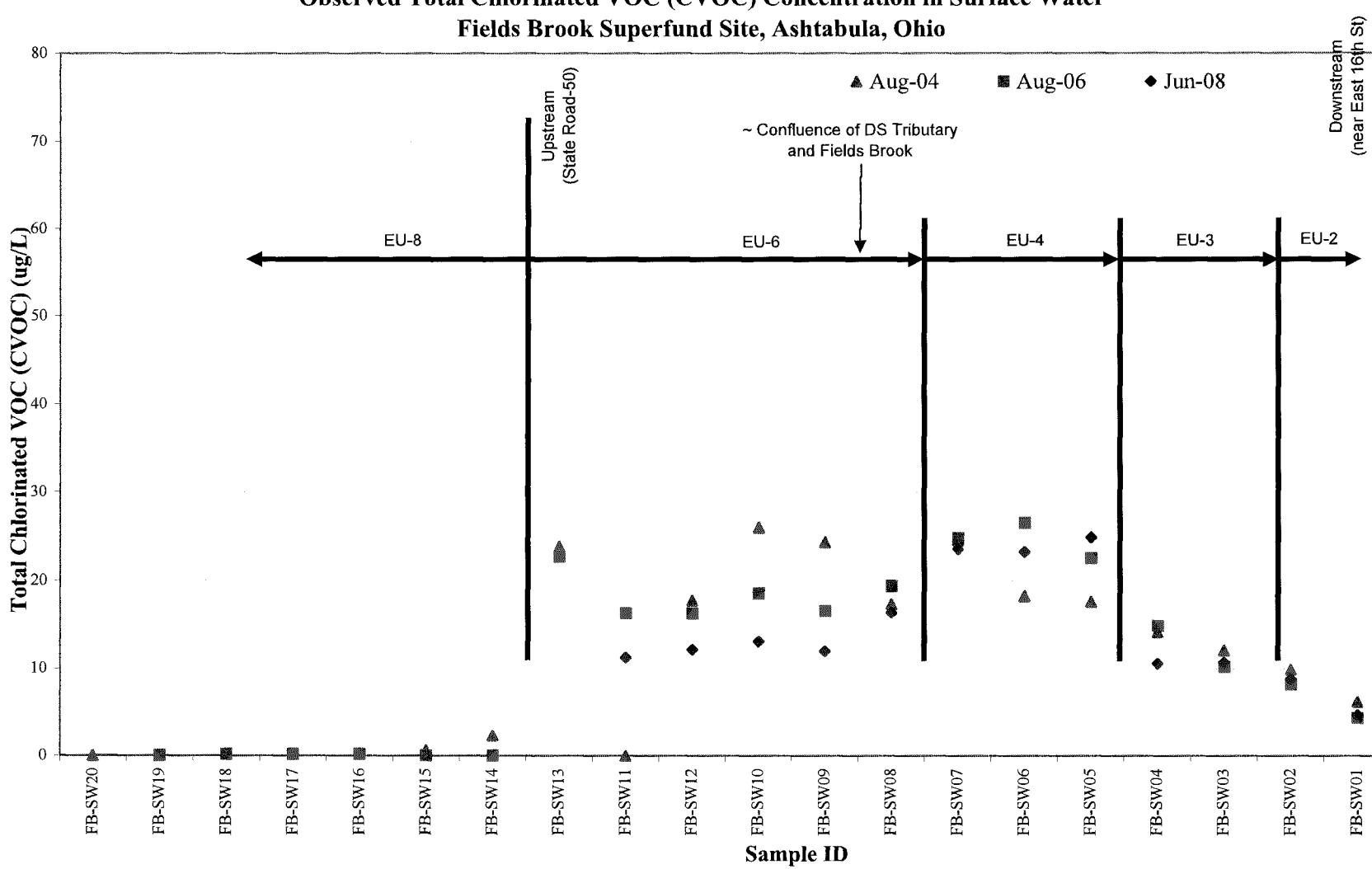








**Figure 13**  
**Observed Total Chlorinated VOC (CVOC) Concentration in Surface Water**  
**Fields Brook Superfund Site, Ashtabula, Ohio**



Note : Only the following VOCs were included in the calculation of the Total Chlorinated VOC concentration: cis-1,2-Dichloroethene, Trichloroethene, Tetrachloroethene, and 1,1,2,2-Tetrachloroethane.

## **Appendix A**

**Table A-1**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Soil Samples**

**Table A-1**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Soil Samples**

List of Compounds	CRGs		EU-6															
	Residential	Industrial	FB-SS18 0608	FB-SS20 0608	(2) 0608-06	ML-SS01 0608-18	ML-SS01 0608-18	ML-SS02 0608-14	ML-SS02 0608-14	ML-SS03 0608-05	ML-SS03 0608-18	ML-SS04 0608-04	ML-SS04 0608-04	ML-SS05 0608-04	ML-SS05 0608-18	ML-SS06 0608-06	ML-SS06 0608-72	ML-SS07 0608-06
VOCs (units are in mg/kg)																		
Decahydronaphthalene																		
1-Chloroethane																		
Vinyl Chloride																		
Bromoethane																		
Chloroethane																		
Trichloroethane																		
1,1-Dichloroethane																		
Carbon Disulfide																		
1,1,2-Trichloro-1,2,2-Trifluoroethane																		
Aktope																		
Methyl-Tetra-Chloroethane																		
Tris(1,2-Dichloroethane)																		
Methyl-1-Buto-Ether																		
1,1-Dichloroethane																		
Carboxy-1,2-Dichloroethane																		
Sterane																		
Chloroform																		
1,1,1-Trichloroethane																		
Carbon Tetrachloride																		
Bromoform																		
1,2-Dichloroethane																		
Trichloroethene																		
1,2-Dichloropropane			0.0071		0.0074													
Bromodichloromethane																		
2-Chloro-1,3-Dibromoethane																		
4-Methyl-1-Pentene																		
Toluene																		
Tris(1,3-Dichloro-propene)																		
1,2,3-Tribromoethane																		
Tetra-chloroethene			0.008	0.0071	U													
2-Hexanone																		
Dibromo-dichloromethane																		
1,2-Dibromoethylene																		
Chloroform																		
Ethybenzene																		
Styrene																		
Bromoform																		
Propylbenzene																		
1,1,2-Tetra-chloroethane		0.006	U	0.0071	U													
1,3-Diethylbenzene																		
1,4-Diethylbenzene																		
1,2-Diethylbenzene																		
1,1,2,2-Tetrachloro-1-Chloroepoxide																		
1,2,4-Tri-chloro-1,3-butadiene																		
Nylene (Total)																		
Methyl Acetate																		
Cyclohexane																		
Methylcyclohexane																		
MP-Naphtha																		
O-Nitroene																		

**Table A-1**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Soil Samples**

**Table A-1**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Soil Samples**

**Table A-1**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Soil Samples**

**Table A-1**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Soil Samples**





**Table A-1**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Soil Samples**

List of Compounds	CRGs		EU-6																																				
	Residential	Industrial	ML-SSB8 0608-48	ML-SSB9 0608-96	ML-SS10 0608	ML-SS10 0608-96	ML-SS11 0608-72	ML-SS12 0608-96	ML-SS13 0608-120	ML-SS14 0608-120	ML-SS15 060806	MIC-SS08 060805	MIC-SS09 060806	MIC-SS10 060806	MIC-SS11 060806	MIC-SS12 060806	MIC-SS13 060806	MIC-SS14 060806	MIC-SS15 060806	MIC-SS16 060806	MIC-SS17 060806	MIC-SS18 060806	MIC-SS19 060806																
PCBs		(units are in mg/kg)																																					
Aroclor-1016		0.03	U	0.03	U	0.13	U	0.03	U	0.59	U	1.50	U	0.20	U	0.03	U	0.13	U	0.15	U	0.30	U	0.61	U	0.29	U	0.03	U										
Aroclor-1222		0.04	U	0.04	U	0.19	U	0.04	U	0.83	U	2.10	U	0.41	U	0.04	U	0.15	U	0.42	U	0.41	U	0.16	U	0.35	U	0.21	U	0.02	U								
Aroclor-1242		0.03	U	0.03	U	0.10	U	0.03	U	0.51	U	1.00	U	0.21	U	0.02	U	0.16	U	0.46	U	0.10	U	0.11	U	0.31	U	0.21	U	0.02	U								
Aroclor-1342		0.02	U	0.02	U	0.10	U	0.02	U	0.41	U	0.50	U	0.25	U	0.20	U	0.11	U	0.19	U	0.02	U	0.20	U	0.40	U	0.19	U	0.43	U	0.21	U	0.02	U				
Aroclor-1248		0.09	U	0.02	U	0.50	U	0.25	U	5.20	U	6.80	U	2.50	U	0.02	U	50.00	U	0.60	J	1.10	U	0.29	U	4.60	U	1.50	U	2.80	U	6.10	U	1.70	U	0.31	U		
Aroclor-1254		0.02	U	0.02	U	0.10	U	0.02	U	0.41	U	1.00	U	0.21	U	0.02	U	12.00	U	0.11	U	0.10	U	0.02	U	0.20	U	0.46	U	0.10	U	0.41	U	0.02	U				
Aroclor-1260		0.02	U	0.02	U	0.10	U	0.02	U	0.41	U	1.00	U	0.21	U	0.02	U	12.00	U	0.11	U	0.10	U	0.02	U	0.40	U	0.10	U	0.43	U	0.21	U	0.02	U				
Total Aroclor (1016,1222,1242,1248,1254,1260)		50		50		0.50		0.25		5.2		6.8		2.5		0.50		6.00	J	1.7	U	0.29		1.4		4.6		1.5		2.8		6.1		1.7		0.31		0.11	
Metals		(units are in mg/kg)																																					
Silver			0.57	U	0.05	J	0.59	U	0.09	J	0.50	U	0.59	U	0.65	U																							
Aluminum			1350	U	11000	U	18000	U	12500	U	12700	U	12700	U	14500	U																							
Boron			17	U	4.3	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2	*	1.2				
Beryllium			0.61		0.52	J	0.61		0.61		0.57		0.6		0.69		0.65	J*	0.73	*		0.63	*	0.52	J*														
Calcium			14200		5980		2770		30600		20300		15800		16800																								
Cadmium			0.57	U	0.55	U	0.59	U	0.61	U	0.56	U	0.56	U	0.59	U	0.65	U																					
Chromium			1.2	U	1.0	*	0.9	*	0.9	*	1.1	*	1.1	*	1.4	*	1.4	*	1.4	*	1.4	*	1.4	*	1.4	*	1.4	*	1.4	*	1.4	*	1.4	*	1.4				
Copper			18.3		16.3		15.1		21		17.1		17.5		19.0																								
Iron			28.1		27.2	N	29.8	N	19.8	N	20.7	N	22.4	N	27.4																								
Potassium			35300		29500		30000		22300		24400		29100		36900																								
Manganese			2040		1699	E	1394	E	1965	E	1870	E	1886	E	2070																								
Sodium			2170		5110		4600		17100		18200		18100		17100																								
Nickel			546		352		350		350		377		341		678																								
Zinc			269	J	158	J	176	J	241	J	322	J	254	J	528	J																							
Radium			30.8		27.9	N*	32.9	N*	43.4	N*	33.9	N*	31.2	N*	32.2																								
Thallium			1	U	1	U	0.68	J	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U			
Lead			18.6		14.7		20.3		14.4		41.2		38.6		21																								
Zinc			75.4	E	69.7	N	73.8	N	62.6	N	63	N	89.3	N	85.6	N*																							
Lead			14.5	E	13.6		15.8		15.5		17.3		13.8		16.1																								
Selenium			0.86	N	0.55		0.59		0.61		0.56		0.56		0.59	U	0.66	U																					
Antimony			1.15		1.15		1.49		1.20		1.20		1.15		1.15		1.15																						
Mercury			16.5	N	14.8	N	12.8	N	16.1	N	10.6	N	12.4	N	15.3	N	12.2	*	18.5	*																			
Radium-226			0.038	U	0.037	U	0.04	U	0.14	N	0.053	N	0.068	N	0.064	U																							
Radium-228			0.341		0.039		1.04		1.04		1.10		0.87		1.04		1.28		1.5																				

*U = Analyte was analyzed for but not detected*

*J = Analyte was analyzed for and the reported value was obtained from a reading less than the LODL but greater than the IDL*

*E = Estimated Value*

*N = Indicated sample spike recovery was outside of control limits*

*\* = The reported value is less than the Control Limit divided by the Detection Limit or greater than the Instrument Detection Limit or 300*

*\*\* = This may be a duplicate analysis for the same sample and component as the previous sample, either due to control limits*

*(N) = The value is not statistically significant at the 95% confidence level*

*(C) = There is no FB-SS19 sample for 2008, even due to site removal, soil sampling is ETU*

*Residential = FB-SS01 thru FB-SS11*

*Data in bold indicate exceedances of CRGs.*

**Table A-2**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Sediment Samples**

Table A-2  
Fields Brook-Millennium 2008 Sampling Event  
Summary of Analytical Results for Sediment

VOCs	List of Compounds	EL-1												EL-2															
		FR-SD34 0000	FR-SD35 0000	FR-SD36 0000	FR-SD37 0000	FR-SD38 0000	FR-SD39 0000	FR-SD40 0000	FR-SD41 0000	FR-SD42 0000	FR-SD43 0000	FR-SD44 0000	EHS CRG#	DS-SD1 0000	DS-SD2 0000	DS-SD3 0000	DS-SD4 0000	DS-SD5 0000	DS-SD6 0000	DS-SD7 0000	DS-SD8 0000								
<b>Units are in <math>\mu\text{g}/\text{kg}</math></b>																													
Dibenzodioxocinone														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Chloromethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Vinyl Chloride														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Bromoethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Chloroethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Trichloroethoxoethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
1,1-Dibromoethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Carbon Disulfide														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Acetone														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Methylene Chloride														0.025	U	0.018	U	0.015	U	0.039	U	0.018	U	0.017	U	0.036	U	0.018	U
Trans-1,2-Dibromoethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Nebri-T-Butox Ethier														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
1,1-Dibromoethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Ox-1,2-Dibromoethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
2-Bromotoluene														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
1,2-Dibromoethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Trichloroethylene														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
1,2-Dibromoethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Bromodichloroethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Cis-1,3-Dibromopropene														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
4-Meth-2-Pentenoate														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Tetane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Trans-1,3-Dibromopropene														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
1,1,2-Trichloroethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Terchloroethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
2-Hexanone														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Dibromochloroethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
1,2-Dibromoethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Chloroethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
2-Chloroethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
2,2-Dibromoethane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
2,2-Dibromo-1-Chloropropane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Xylene (Total)														0.023	U	0.021	U	0.024	U	0.027	U	0.021	U	0.028	U	0.025	U		
Methyl Acetate														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Cyclohexane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
Methylcyclohexane														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U
M-NXene														0.015	U	0.014	U	0.016	U	0.018	U	0.014	U	0.017	U	0.017	U	0.015	U
Cyanine														0.0076	U	0.0071	U	0.0079	U	0.0051	U	0.0072	U	0.0069	U	0.0093	U	0.0085	U

**Table A-2**  
**Fields Brook-Millennium 2008 Sampling Eve**  
**Summary of Analytical Results for Sediment**

List of Compounds	EU6 CRGs	EU-6														ML-SD01 0608-01	ML-SD02 0608-02
		FB-SD08 0608	FB-SD09 0608	FB-SD10 0608	FB-SD11 0608	FB-SD12 0608	FB-SD21 0808	FB-SD22 0808	FB-SD23 0808	FB-SD24 0808	FB-SD25 0808	FB-SD26 0808	FB-SD27 0808	FB-SD28 0808	FB-SD29 0808		
VOCs (units are in mg/kg)																	
Dichlorodifluoromethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Chloromethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Vinyl Chloride	10,8	0.007 J	0.0034 J	0.0031 J	J 0.004	J 0.032										0.002 U	0.0014 J
Bromomethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Chloroethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Trichlorofluoromethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.005 U	0.0063 U
1,1-Dichloroethene		0.004 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U	J 0.032	J 0.033								0.0023 J	0.0063 U
Carbon Disulfide		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
1,1,2-Trifluoro-1,2,2-Trifluoroethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Acetone		0.005 U	0.018 U	U 0.05	0.02 U	U 0.015 U										0.015 U	0.016 U
Methylmer Chlord		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Trans-1,2-Dichloroethene		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.026 J	0.0063 U
Methyl-1,1-Butox-Ether		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
1,1-Dichloroethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Cis-1,2-Dichloroethene		0.27 J	J 0.08	J 0.003	J 0.028	J 0.33										0.91	0.024
2-Butane		0.018 U	0.018 U	U 0.019	U 0.02	U 0.015 U										0.015 U	0.016 U
Chloroform		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
1,1,1-Trichloroethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Carbon Tetrachloride		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Benzene		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
1,2-Dichloroethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Trichloroethene	1854	0.11 U	0.039 J	J 0.075 U	0.0082 U	0.099										0.031	0.011
1,2-Dicloropropane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Bromodichloromethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Cis-1,3-Dichloropropene		0.018 U	0.018 U	U 0.019	U 0.02	U 0.015 U										0.015 U	0.016 U
4-Methyl-2-Pentanone		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Toluene		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
trans-1,3-Dichloropropene		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.003 U	0.003 U
1,1,2-Trifluoroethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U	J 0.031 J									0.023 J	0.0063 U
Tetrahydrofuran	492	0.27 U	0.043 J	J 0.075 U	0.0082 U	0.14 U										0.058	0.0052 J
2-Hexane		0.018 U	0.018 U	U 0.019	U 0.02	U 0.015 U										0.015 U	0.016 U
Dichloromethane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
1,2-Dimercaptane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Chlorobenzene		0.0088 U	0.0018 J	J 0.075 U	J 0.019	J 0.032 U										0.015 J	0.0063 U
Phenol		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Styrene		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Bromoform		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Isopropylbenzene		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
1,1,2,2-Tetrachloroethane	102	0.0063 J	J 0.002 J	J 0.075 U	U 0.002 U	U 0.002 U										0.022	0.002 J
1,3-Dichlorobenzene		0.097 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
1,4-Dichlorobenzene		0.031 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
1,2-Dichlorobenzene		0.049 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
1,2-Dibromo-3-Chloropropane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.12										0.006 U	0.0063 U
1,2,4-Trichlorobenzene		0.11 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Nylen (Total)		0.022 U	U 0.022	U 0.022	U 0.025	U 0.019										0.018 U	0.019 U
Methyl Acetate		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Cyclohexane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
Methylcyclohexane		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U
M,P-Xylene		0.014 U	0.014 U	U 0.015	U 0.016	U 0.012 U										0.012 U	0.013 U
O,Xylene		0.0072 U	0.0072 U	0.0075 U	0.0082 U	0.0062 U										0.006 U	0.0063 U

**Table A-2**  
**Fields Brook-Millennium 2008 Sampling Eve**  
**Summary of Analytical Results for Sediment**

List of Compounds	EU-6							
	ML-SD03 0608-02	ML-SD04 0608-02	ML-SD05 0608-02	ML-SD06 0608-02	ML-SD07 0608-02	ML-SD08 0608-02	ML-SD09 0608-02	MLSD 10 0608-02
<b>VOCs (units are in mg/kg)</b>								
Dichlorodifluoromethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Chloromethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Vinyl Chloride	0.0063	U	0.0061	J	0.32	U	0.023	U
Bromoethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Chloroethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Trichlorofluoromethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
1,1-Dichloroethylene	0.0062	U	0.0075	U	0.032	J	0.0023	J
Carbon Disulfide	0.0062	U	0.0075	U	0.32	J	0.0067	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Acetone	0.011	J	0.013	J	0.21	J	0.017	U
Methylene Chloride	0.0062	U	0.0075	U	0.32	U	0.0067	U
Trans-1,2-Dichloroethene	0.0012	J	0.0019	J	0.32	U	0.0097	U
Methyl-1-Butyl Ether	0.0062	U	0.0075	U	0.32	U	0.0067	U
1,1-Dichloroethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Cis-1,2-Dichloroethene	0.0059	U	0.010	U	2.3	U	0.14	U
2-Hexanone	0.015	U	0.019	U	0.79	U	0.017	U
Bromoform	0.0062	U	0.0075	U	0.32	U	0.0067	U
1,1,1-Trichloroethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Carbon Tetrachloride	0.0062	U	0.0075	U	0.32	U	0.0067	U
Perchloric	0.0062	U	0.0075	U	0.32	U	0.0067	U
1,2-Dichloroethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Trichloroethene	0.0034	J	0.0066	J	3.6	U	0.26	U
1,2-Dichloropropene	0.0062	U	0.0075	U	0.32	U	0.0067	U
Bromodichloromethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Cis-1,3-Dichloropropene	0.0062	U	0.0075	U	0.32	U	0.0067	U
4-Methyl-2-Pentanone	0.015	U	0.019	U	0.79	U	0.017	U
Toluene	0.0062	U	0.0075	U	0.32	U	0.0067	U
Trans-1,3-Dichloropropene	0.0062	U	0.0075	U	0.32	U	0.0067	U
1,1,2-Trichloroethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Tetrachloroethane	0.0027	J	0.0075	U	1.8	U	0.19	U
2-Hexanone	0.015	U	0.019	U	0.79	U	0.017	U
Dibromochloromethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
1,2-Dibromoethane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Chlorobenzene	0.0062	U	0.0075	U	0.32	U	0.0067	U
Ethylbenzene	0.0062	U	0.0075	U	0.32	U	0.0067	U
Propylbenzene	0.0062	U	0.0075	U	0.32	U	0.0067	U
Bromoform	0.0062	U	0.0075	U	0.32	U	0.0067	U
Isopropylbenzene	0.0062	J	0.0075	U	0.32	U	0.0067	U
1,1,2,2-Tetrachloroethane	0.0021	J	0.0075	U	0.32	U	0.0067	U
1,3-Diisobutylene	0.0062	U	0.0075	U	0.32	U	0.0067	U
1,4-Diisobutylene	0.0062	U	0.0075	U	0.32	U	0.0067	U
1,2-Diisobutylene	0.0062	U	0.0075	U	0.32	U	0.0067	U
1,2-Dibromo-3-Chloropropane	0.002	J	0.0075	U	0.32	U	0.0067	U
1,2,4-Trichlorobenzene	0.0062	U	0.002	J	0.32	U	0.0067	U
Xylene (Total)	0.019	U	0.022	U	0.32	U	0.02	U
Methyl Acetate	0.0062	U	0.0075	U	0.32	U	0.0067	U
Cyclohexane	0.0062	U	0.0075	U	0.32	U	0.0067	U
Methylcyclohexane	0.0062	U	0.0075	U	0.32	U	0.0067	U
M,p-Xylene	0.012	U	0.015	U	0.63	U	0.013	U
O-Xylene	0.0062	U	0.0075	U	0.32	U	0.0067	U

**Table A-2**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Sediment Samples**

**Table A-2**  
**Fields Brook-Millennium 2008 Sampling Eve**  
**Summary of Analytical Results for Sediment**

**Table A-2**  
**Fields Brook-Millennium 2008 Sampling Eve**  
**Summary of Analytical Results for Sediment**

**Table A-2**  
**Fields Brook-Millennium 2008 Sampling Eve**  
**Summary of Analytical Results for Sediment**



Table A-2  
Fields Brook-Millennium 2008 Sampling Event  
Summary of Analytical Results for Sediment

List of Compounds	EL-1												EL-5														
	FB-SD14 0808	FB-SD15 0808	FB-SD16 0808	FB-SD17 0808	FB-SD18 0808	FB-SD19 0808	FB-SD20 0808	FB-SD21 0808	FB-SD22 0808	FB-SD23 0808	FB-SD24 0808	EHS CRGs	DS-SD14 0808	DS-SD15 0808	DS-SD16 0808	DS-SD17 0808	DS-SD18 0808										
TCBs	Units are in mg/kg	0.3	1.5	0.19	0.44	1.8	1.8	0.28	1.1	0.31	1.1	0.29	1.1	0.64	1.1	0.29	1.1	1.8	1.1	0.14	1.1	0.25	1.1	0.14	1.1		
Arctiche-016		0.42	1.1	2.2	1.1	0.41	1.1	0.63	1.1	2.5	1.1	0.4	1.1	0.41	1.1	0.42	1.1	0.51	1.1	0.41	1.1	0.49	1.1	0.49	1.1		
Arctiche-121		0.21	1.1	0.21	1.1	0.21	1.1	0.3	1.1	0.21	1.1	0.22	1.1	0.21	1.1	0.21	1.1	0.21	1.1	0.21	1.1	0.21	1.1	0.21	1.1		
Arctiche-122		0.21	1.1	1.1	1.1	0.21	1.1	0.3	1.1	0.21	1.1	0.22	1.1	0.21	1.1	0.21	1.1	0.21	1.1	0.21	1.1	0.21	1.1	0.21	1.1		
Arctiche-142		0.21	1.1	1.1	1.1	0.21	1.1	0.3	1.1	0.22	1.1	0.22	1.1	0.21	1.1	0.25	1.1	0.21	1.1	0.25	1.1	0.21	1.1	0.25	1.1		
Arctiche-148		1.4	7.3	1.1	1.1	1.1	1.1	2.8	1.3	1.3	1.1	1.6	1.2	2.7	1.1	2.1	1.1	4.2	1.1	0.14	1.1	0.14	1.1	0.14	1.1	0.14	
Arctiche-124		0.21	1.1	1.1	1.1	0.21	1.1	0.31	1.1	1.3	1.1	0.22	1.1	0.21	1.1	0.21	1.1	0.15	1.1	0.15	1.1	0.15	1.1	0.15	1.1	0.15	
Arctiche-125		0.21	1.1	1.1	1.1	0.21	1.1	0.31	1.1	1.3	1.1	0.22	1.1	0.21	1.1	0.21	1.1	0.15	1.1	0.15	1.1	0.15	1.1	0.15	1.1	0.15	
Arctiche-250		1.4	7.3	1.1	1.1	1.1	1.1	2.8	1.3	1.3	1.1	1.6	1.2	2.7	1.1	2.1	1.1	4.2	1.1	0.14	1.1	0.14	1.1	0.14	1.1	0.14	
Total Arctiche [10.6, 12.1, 12.3, 12.2, 12.8, 12.5, 12.6]	1.4	7.3	1.3	2.8	8.6	1.2	1.6	2.7	2.1	1.6	2.7	2.1	1.6	2.7	2.1	1.5	6.4	14	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	
Metals	(units are in mg/kg)																										
Silver																											
Aluminum																											
Boron																											
Beryllium																											
Calcium																											
Chromium																											
Cobalt																											
Chromium																											
Copper																											
Iron																											
Potassium																											
Manganese																											
Manganese																											
Sulfur																											
Nickel																											
Thallium																											
Vanadium																											
Zinc																											
Lead																											
Selenium																											
Antimony																											
Asenic																											
Mercury																											
RAD	Radium-226																										
	Radium-228																										

Notes:

J = Analyte was analyzed but not detected.

J+ = Analyte was analyzed and the reported value was obtained.

E = Element and/or radionuclide recovered outside of control limits.

N = Indication of a negative detection for the element.

R = The reported value is zero due to Control Radon Detection Limit.

\* = The data is used for duplicate analysis when the sample and air Data are held indicate presence of CCR.

**Table A-2**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Sediment**

List of Compounds	EU-6																																							
	EU6 CRGs	FB-SD08 0608	FB-SD09 0608	FB-SD10 0608	FB-SD11 0608	FB-SD12 0608	FB-SD21 0808	FB-SD22 0808	FB-SD23 0808	FR-SD24 0808	FR-SD25 0808	FR-SD26 0808	FB-SD27 0808	FB-SD28 0808	FB-SD29 0808	FB-SD30 0808	ML-SD01 0608-02	ML-SD02 0608-02																						
<b>PCBs (units are in ng/kg)</b>																																								
Aroclor-1016	17	U	1.7	U	0.18	U	0.79	U	0.3	U	0.33	U	1.60	U	0.29	U	2.10	U	0.29	U	0.3	U																		
Aroclor-1221	25	U	2.5	U	0.25	U	1.1	U	0.42	U	0.47	U	2.30	U	0.41	U	2.40	U	0.82	U	2.30	U	0.40	U	3.00	U	0.41	U	0.43	U										
Aroclor-1232	12	U	1.2	U	0.15	U	0.56	U	0.21	U	0.24	U	1.10	U	0.20	U	1.20	U	0.41	U	1.10	U	0.41	U	1.20	U	0.20	U	1.50	U	0.2	U	0.22	U						
Aroclor-1242	12	U	1.2	U	0.13	U	0.56	U	0.21	U	0.24	U	1.10	U	0.20	U	1.20	U	0.41	U	1.10	U	0.41	U	1.20	U	0.20	U	1.50	U	0.2	U	0.22	U						
Aroclor-1248	130		17		1.6		8.5		2.2		2.70	J	16.00	J	1.80	J	6.40	J	4.30	J	4.90	J	4.80	J	9.20	J	2.80	J	12.00	J	2.1	3								
Aroclor-1254	12	U	1.2	U	0.13	U	0.56	U	0.21	U	0.24	U	1.10	U	0.20	U	1.20	U	0.41	U	1.10	U	0.41	U	1.20	U	0.20	U	1.50	U	0.2	U	0.22	U						
Aroclor-1260	12	U	1.2	U	0.13	U	0.56	U	0.21	U	0.24	U	0.81	J	0.20	U	1.20	U	0.41	U	1.10	U	0.41	U	1.20	U	0.20	U	1.50	U	0.2	U	0.22	U						
Total Aroclor J016,J223,J232,J242,J248,J254,J260)	7	<b>130</b>	<b>17</b>	<b>1.6</b>	<b>8.5</b>	<b>2.2</b>	<b>2.7</b>	<b>2</b>	<b>16.81</b>	<b>J</b>	<b>1.8</b>	<b>J</b>	<b>6.4</b>	<b>J</b>	<b>4.3</b>	<b>4.9</b>	<b>J</b>	<b>4.8</b>	<b>J</b>	<b>9.2</b>	<b>J</b>	<b>2.8</b>	<b>J</b>	<b>32</b>	<b>J</b>	<b>2.1</b>	<b>3</b>													
<b>Metals (units are in mg/kg)</b>																																								
Silver	0.73	U	0.16	J	0.73	U	0.12	J	0.59	U																														
Aluminum	14900		9120		12600		10800		10100																															
Barium	109		564		108		137		119																															
Beryllium	0.63	J	0.34	J	0.53	J	0.66	J	0.36	J																														
Cadmium	21.99		11800		10100		14100		14100																															
Cobalt	0.73	U	0.17	J	0.72	U	0.17	J	0.59	U																														
Cobalt	12.1		10.8		9.9		12.3		9.4																															
Chromium	20.7		29.5		18.4		30.7		19.5																															
Copper	19.5		21.2		31.6		30.6		25.8																															
Iron	24900		22200		24400		24900		25300																															
Potassium	1490		1090		1280		1340		1110																															
Magnesium	3570		5370		6190		6680		5300																															
Manganese	316		715		697		728		617																															
Sodium	306	J	261	J	261	J	280	J	220	J																														
Nickel	25.2		26.9		25.8		30.3		26.7																															
Thallium	1.5	U	1.4	U	1.5	U	1.6	U	1.2	U																														
Vanadium	25.6		38.9		34.2		45.7		27.7																															
Zinc	102	E	88.5	E	90.6	E	124	E	82.7	E																														
Lead	17.6	E	17.7	E	15.2	E	23.6	E	17.1	E																														
Selenium	1	N	0.68	JN	0.73	UN	0.69	JN	0.59	UN																														
Antimony	1.5	UN	1.4	UN	1.5	UN	1.6	UN	1.2	UN																														
Arsenic	7.1	N	10.6	N	11.1	N	10.2	N	10.6	N																														
Mercury	0.19		1.1	J	0.37		3		0.35																															
RAD																																								
Radium-226	1.46		1.05		1.22		1.04		0.978																															
Radium-228	1.22		1.18		1.27		0.84		1.07																															

**Notes:**

*U* = Analyte was analyzed for but not detected  
*J* = Analyte was analyzed for and the reported value was obtained/*J*  
*E* = Estimated Value  
*N* = Indicated sample spike recovery was outside of control limits  
*B* - The reported value is less than the Contract Required Detection  
*\** = This flag is used for duplicate analysis when the sample and sum Data in bold indicate exceedances of CRGs.

**Table A-2**  
**Fields Brook-Millennium 2008 Sampling Event**  
**Summary of Analytical Results for Sediment**

List of Compounds	EU-6									
	ML-SD03 0608-02	ML-SD04 0608-02	ML-SD05 0608-02	ML-SD06 0608-02	ML-SD07 0608-02	ML-SD08 0608-02	ML-SD09 0608-02	MLSD 10 0608-02	ML-SD11 0608-02	
<b>PCBs (units are in mg/kg)</b>										
Aroclor-1016	0.3	U	0.72	U	0.29	U	0.61	U	0.29	U
Aroclor-1221	0.42	U	1	U	0.41	U	0.86	U	0.41	U
Aroclor-1232	0.21	U	0.51	U	0.2	U	0.43	U	0.21	U
Aroclor-1242	0.21	U	0.51	U	0.2	U	0.43	U	0.21	U
Aroclor-1248	2.4	J	6.9	U	1.5	U	3.6	U	4.5	U
Aroclor-1254	0.21	U	0.51	U	0.2	U	0.43	U	0.21	U
Aroclor-1260	0.21	U	0.51	U	0.2	U	0.43	U	0.21	U
Total Aroclor [1016,1221,1232,1242,1248,1254,1260]	2.4	J	6.9	U	1.5	U	3.6	U	4.5	U
<b>Metals (units are in mg/kg)</b>										
Silver	0.08	J	0.17	J	0.09	J	0.6	U	0.25	J
Aluminum	5610	*	7710	*	8660	*	7050	*	7850	*
Boron	53	62.5	57.2	59.2	*	67.1	30	*	67.1	30
Beryllium	0.3	J	0.41	J	0.39	J	0.36	J	0.46	J
Calcium	16300	13100	25500	41900	22300	J	45800		22300	J
Cadmium	0.59	U	0.71	U	0.6	U	0.6	U	0.58	U
Cobalt	6.9	9	8.1	6.4	8.5	U	4.7		8.5	4.7
Chromium	11.7	N*	18.8	N*	14	N*	25.2		38	N*
Copper	14.9	*	24.5	*	22	*	20.3	N	20.3	*
Iron	17700	21700	21100	20200	22800		15300		22800	
Potassium	646	E	839	E	790	E	891	E	787	E
Magnesium	3590	4460	4930	5850	4370		8530		4370	
Manganese	428	606	594	491	641		479		641	
Sodium	225	J	266	J	250	J	229	J	204	J
Nickel	16.5	21.9	21.5	20.2	N*		21.7		13.5	N*
Thallium	1.2	UN	1.4	UN	1.2	U	1.2	UN	0.99	U
Vanadium	16.3	N	26.2	N	20.8	N	21.7		29.8	N
Zinc	49.9	NE	97.8	NE	72.4	NE	64	NE	65.9	NE
Lead	11.2	*F	16.4	*E	12.8	F	11		16.8	7.4
Selenium	0.62	U	0.63	JN	0.95	N	0.65	U	0.59	N
Antimony	1.2	UN	1.4	UN	1.2	UN	1.5	JN	1	UN
Arsenic	8.8	N*	9.7	N*	9.2	N*	10.2	N	12.4	N*
Mercury	0.3	N*	0.5	N*	0.09	N*	0.069	N	0.92	N*
<b>RAD</b>										
Radium-226					0.799		0.929		0.783	
Radium-228					0.948		1.00		0.791	
									0.996	
									0.708	
									0.781	

Notes:

U = Analyte was analyzed for but not detected

J = Analyte was analyzed for and the reported value was obtained

E = Estimated Value

N = indicated sample spike recovery was outside of control limits

R = The reported value is less than the Contract Required Detection

\* = This flag is used for duplicate analysts when the sample and so

Data in bold indicate exceedances of CRGs.

**Table A-3**  
**Fields Brook 2008 Sampling Event**  
**Summary of Analytical Results for Surface Water Samples**

VOCs (units are in ug/L)	List of Compounds	EU-6													
		EL-2			EL-3			EU-4			EU-6				
		FB-SW01 0608	FB-SW02 0608	DUP of SW02 0608	FB-SW03 0608	FB-SW04 0608	FB-SW05 0608	FB-SW06 0608	FB-SW07 0608	FB-SW08 0608	FB-SW09 0608	DUP of FB-SW09 0608	FB-SW10 0608	FB-SW11 0608	FB-SW12 0608
Chloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodifluoromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	0.5 U	0.13 U	0.12 U	0.05 U	0.18 U	0.11 U	0.09 U	0.56 U	0.57 U	0.56 U	0.57 U	0.56 U	0.56 U	0.56 U	0.67 U
Bromoethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dibromoethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone	3.3 U	2.9 U	4.5 U	3.6 U	7.4 U	5.1 U	5.8 U	4.3 U	4.3 U	4.3 U	4.6 U	4.5 U	4.6 U	4.1 U	4.1 U
Carbon Disulfide	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl acetate	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	0.29 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.35 U	0.35 U	0.35 U	0.35 U				
Trans-2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 U	0.15 U	0.15 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Methyl-T-Butylether	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dibromoethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,2-Dibromoethane	1.8 U	3 U	3.1 U	3.7 U	4.1 U	9.4 U	9.2 U	9.2 U	4.9 U	4.9 U	4.5 U	4.6 U	4.6 U	5.1 U	3.9 U
2-Bromo-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cation Tephalohidate	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.22 U	0.19 U	0.16 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.14 U	0.14 U	0.14 U	0.11 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene	1.3 U	2.5 U	2.3 U	2.8 U	3.8 U	7.3 U	6.9 U	7.3 U	5.2 U	4.9 U	4.8 U	5.2 U	4.8 U	4.8 U	4.6 U
Methylcyclohexane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoethylmethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trans-1,3-Dichloropropene	0.5 U	0.17 U	0.17 U	0.14 U	0.12 U	0.12 U	0.12 U	0.24 U	0.24 U	0.24 U	0.16 U	0.17 U	0.18 U	0.17 U	0.17 U
1,1,2-Trichloroethane	0.54 U	1.1 U	0.92 U	1.2 U	1.5 U	2.8 U	2.6 U	2.7 U	1.8 U	1.6 U	1.7 U	1.7 U	1.7 U	1.7 U	1.5 U
Tetrahydroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromobiphenyl	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.41 U	0.31 U	0.26 U	0.26 U	0.3 U	0.27 U	0.21 U	0.2 U	0.18 U	0.18 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylenes (total)	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Strene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	1 U	2.2 U	2.2 U	3 U	12 U	54 U	46 U	44 U	45 U	45 U	1 U	1 U	0.84 U	0.98 U	0.98 U
1,3-Dibromoethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dibromoethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Dibromo-5-Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Tribromo-5-Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Tribromo-5-Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table A-3

## Fields Brook 2008 Sampling Event

## Summary of Analytical Results for Surface Water Samples

List of Compounds	EU-2		EU-3			EU-4			EU-6					
	FB-SW01 0608	FB-SW02 0608	DUP of SW02 0608	FB-SW03 0608	FB-SW04 0608	FB-SW05 0608	FB-SW06 0608	FB-SW07 0608	FB-SW08 0608	FB-SW09 0608	DUP of FB-SW09 0608	FB-SW10 0608	FB-SW11 0608	FB-SW12 0608
SVOCs (units are in ug/l)														
Benzaldehyde	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Phenols	5 U	5 U	5 U	5 U	1.5 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bis(2-Chloroethyl)Ether	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorophenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylphenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,2'-Oxybis(2-Chloropropane)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetophenone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methylphenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitroso-Di-N-Propylamine	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Nitrobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Isophorone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Nitrophenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bis(2-chloroethoxy)methane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloroniline	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobutadiene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Caprolactam	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloro-3-Methylphenol	5 U	5 U	5 U	5 U	3.7 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylnaphthalene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorocyclopentadiene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,6-Trichlorophenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
1,1'-Biphenyl	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorophthalene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Nitroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Dimethyl Phthalate	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acenaphthylene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-Nitroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acenaphthene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrophenol	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Nitrophenol	20 U	20 U	20 U	20 U	5.4 J	20 U	20 U	20 U	20 U					
Dibenzofuran	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrostilbene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Diethyl Phthalate	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Fluorene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorophenyl Phenyl Ether	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Nitroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4,6-Dinitro-2-Methylphenol	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
N-Nitrosodipiperazine(1)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4,5 Tetrachlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Bromophenyl Phenyl Ether	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Atrazine	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pentachlorophenol	5 U	5 U	5 U	5 U	4.3 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Phenanthrene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Anthracene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Di-N-Butyl Phthalate	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Fluoranthene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pyrene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

Table A-3

Fields Brook 2008 Sampling Event

Summary of Analytical Results for Surface Water Samples

List of Compounds	EU-2		EU-3				EU-4				EU-6			
	FB-SW01 0608	FB-SW02 0608	DUP of SW02 0608	FB-SW03 0608	FB-SW04 0608	FB-SW05 0608	FB-SW06 0608	FB-SW07 0608	FB-SW08 0608	FB-SW09 0608	DUP of FB-SW09 0608	FB-SW10 0608	FB-SW11 0608	FB-SW12 0608
Benzyl Phthalate	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benz(a)anthracene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chrysene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bis(2-Ethylhexyl)Phthalate	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Di-N-Octyl Phthalate	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benz(b)fluoranthene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benz(k)fluoranthene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benz(a)pyrene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibenz(a,h)anthracene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benz(g,h,i)perylene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PCBs (units are in mg/kg)														
Aroclor-1016	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aroclor-1221	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Aroclor-1232	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aroclor-1242	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aroclor-1248	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aroclor-1254	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aroclor-1260	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Metals (units are in mg/kg)														
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Aluminum	185 J	105 J	97.7 J	479	2750	1120	641	473	322	204	234	306	263	177 J
Barium	53.8 J	51 J	51.4 J	66.6 J	77.5 J	64.9 J	58.8 J	60.5 J	70.7 J	47.6 J	48.1 J	62.1 J	48.8 J	47.2 J
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	58700	54800	55800	56600	59900	51500	60600	60900	52400	48700	49600	64400	50800	50500
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cobalt	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Chromium	0.67 J	10 U	10 U	0.76 J	5.7 J	2.6 J	1.2 J	0.93 J	10 U	10 U	10 U	10 U	10 U	10 U
Copper	1.7 J	1.6 J	2 J	2.8 J	12.3 J	7 J	4.7 J	3.6 J	1.9 J	1.8 J	1.9 J	2.5 J	1.7 J	1.7 J
Iron	416	326	337	1040	5490	2270	1260	1060	756	551	600	790	651	548
Potassium	3460 J	2870 JE	2940 JE	3020 JE	3640 JE	3020 JE	3070 JE	3090 JE	2960 JE	2870 JE	2900 JE	3770 JE	2900 JE	2800 JE
Magnesium	11500	11600	11700	11900	12000	9830	11400	11500	10300	9770	9950	12900	10200	10100
Manganese	61.1	20.5	20 J	62.4	245	124	128	141	145	196	142	191	179	159
Sodium	118000	115000	117000	117000	103000	74900	92300	102000	96500	90600	92300	120000	94200	92500
Nickel	3.8 J	1.7 J	2.2 J	2.4 J	9.1 J	3 J	2.7 J	2.5 J	3.1 J	2.8 J	2.3 J	3.8 J	2.6 J	2.8 J
Thallium	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Vanadium	1.9 J	1 J	1.3 J	2.5 J	9.6 J	6.3 J	3.4 J	3.4 J	2.6 J	2.3 J	2.5 J	3.3 J	2.6 J	2.2 J
Zinc	6 J	4.4 J	4 J	7.5 J	42.9 J	17.9 J	12.4 J	10.1 J	9.1 J	5.7 J	6.6 J	7.8 J	7.1 J	6.3 J
Lead	10 U	10 U	10 U	10 U	10 U	10.6	3.2 J	3.2 J	10 U	10 U	10 U	10 U	10 U	10 U
Selenium	35 U	35 U	35 U	48 J	35 U	35 U	35 U	35 U						
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
* Mercury	0.2 U	0.1 J	0.072 J	0.089 J	0.14 J	0.14 J	0.12 J	0.071 J	0.081 J	0.09 J	0.097 J	0.12 J	0.13 J	0.094 J
RAD														
Radium-226	0.288	U	0.431	U	0.391	U	0.364	0.513	0.417	U	0.394	U	0.397	0.536
Radium-228	1.59	1.03	U	0.826	U	1.26	U	1.00	U	0.829	U	0.967	U	1.42

Notes *U* = Analyte was analyzed for but not detected*J* = Analyte was analyzed for and the reported value was obtained from a reading less than the CRDL but greater than the tDL*E* = Estimated Value*N* = Indicated sample spike recovery was outside of control limits

\* This flag is used for duplicate analysis when the sample and sample duplicate are not within control limits